MANUFACTURERS' RECORD.

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Palmetto, a Substitute for Jute Fibre.

By C. B. Warraud.

Can the United States produce a substitute for jute which will be able, not alone to compete in quality and price, but which can also be produced in sufficient quantity to supply the demand? has been a problem which is of much importance to the Southern cotton planter, to the Western farmer and to manufacturers everywhere.

In order to find such a substitute it must be grown so cheaply that the cost of production of the raw material is next to nothing, so as to compete with East India labor, earning daily wages of six and one-quarter cents; it must be from a reliable source and abundant enough to induce capital to provide the necessary plants to put the raw material in merchantable state; the product must be as good and even better in its leading qualities; the raw material must be available at all times of the year, so as to avoid storing expenses, fire insurance and loss of interest, which all would swell the cost of production.

All these requirements could only be found in a plant of spontaneous growth which is capable of reproducing the supply from year to year without much care, cost of cultivation or grown on expensive land. The saw-palmetto has evidently all these requirements, and is strictly a fibrous plant; it was left to human ingenuity and invention to render the same available to commerce.

The majority of trials and experiments were made with purely mechanical means, and the result was either a failure or the production of some article of secondary or tertiary commercial importance. Plastering fibre, upholstering and bedding material, or ship's felt and brush fibre, were the results, which, as a rule, paid the manufacturer a handsome profit and aided to demonstrate the value of saw-palmetto as a fibre plant, but they failed to produce a substitute for jute.

The writer took a very different view from the majority, who tried to solve the problem. To accomplish the decortication of palmetto by purely mechanical means is utterly impossible, as the amount of silicate which the palmetto contains is too great to ever produce a flexible fibre or a fibre which will felt and which can be spun; besides, the hard glossy shield covering the leaf and stems is so closely intermingled with the fibre that the one cannot be removed by mechanical means without partially destroying the other.

It was clearly a problem for chemistry to solve before mechanical skill would be of any avail. As a result of numerous experiments the caustic-soda process seemed to accomplish all that could be wished. By steaming the palmetto in caustic soda the silicate is changed to silicate of soda, which is soluble; the hard glossy shield becomes a soft, gummy soap which can be easily removed by mechanical means—passing the material through rollers and maceration will have the desired effect and produce an excellent fibre.

By satiating the liquid part with quicklime and boiling the same the silicate of soda is changed to silicate of lime, which is insoluble, and the gummy soda combinations also take kindly to the lime and are precipitated as lime compounds, leaving the caustic soda in the solutions, which can be used over and over again with small additions of fresh caustic soda. One dollar per ton will more than cover the cost of lime and loss of soda.

The fibre produced by this process has the same color as jute; while it is shorter in staple, it is much stronger; hence lighter-weight bagging and twine will accomplish the same purpose. Palmetto fibre is not by any means as inflammable as jute. While it will eventually burn, still a spark or a flame will only scorch it; it will not harbor a lingering fire like jute. Neither does the palmetto fibre stain like pine-straw fibre. The fibre felts readily, and can be spun with ease.

One ton of green palmetto produces about one-third of its weight in fibre, or about 600 pound. Assuming that the cost of palmetto is $5.00 per ton and the cost of soda and lime $1.00 per ton, the cost of the material would be $6.00 for 600 pounds of fibre, or $20.00 per ton.

At the time that the patent was granted for this process jute butts were selling at $25.00 per ton, leaving only a margin of $5.00 per ton for manufacturing expenses and profit. At that time, while it was a technical success in every way, it was commercially a failure.

Since then the discovery of the value of palmetto for tanning purposes was made, rendering the fibre a by-product costing practically nothing. Thus the only obstacle in the way of success was removed, making the available margin so great that jute never will be able to compete if this new industry is once thoroughly established. Even the cheap East India labor subsisting on a pint of rice and one rat-tail a day will probably have to look for some other market than the United States to dispose of their product.

A number of causes within the last two years have caused the prices of jute to rise very much. A short jute crop, a large cotton crop, new demands which have been filled by jute, all have had their effect in raising the prices, and it is doubtful if the prices will be ever as low as they were some years ago. The repeal of the duty on jute would have some effect, but the margin in favor of palmetto is so great that there is practically no danger of competition in the future.

The supply of palmetto is so vast as to be practically unlimited. The demand for its products, tannic acid and fibre, is so great that no glutting of the market is possible. The combination of the production of two staple articles at one operation is so advantageous that it is bound to be highly remunerative.

There is no obstacle in the way, neither technically nor commercially, of the South producing the covering for its millions of bales of cotton and bags for the phosphates it mines, with enough to spare to furnish the Western farmer with binder twine and the Northern manufacturer with all the fibre he may require.

The South can produce enough tannic acid from palmetto to supply all home demands and have still a large surplus for export. The South has, besides the great abundance of raw material, cheaper labor than anywhere else in the United States. It has a healthy climate, where work can be carried on the year round. It offers to capital a very remunerative and inviting field, and invites both capital and skilled mechanics to join and help develop its great resources.

Savannah, Ga.

The Coal and Iron Resources of Texas.

DALLAS, TEXAS, February 24.

Editor Manufacturers' Record:

With the exception of the wealth derived from an occasional boom in cattle, sheep or real estate, cotton has always been the chief source of revenue to Texas. The collapse of the various booms has been so calamitous that people are beginning to look to more steady and reliable pursuits, experience having demonstrated that sudden wealth is illusory and liable to vanish as quickly as it materialized. Attention is now being directed to factories and to the development of the mineral and other resources of the State.

Among the other resources, it has always been known that the southeastern part of the State is immensely wealthy in iron ore. This bed of iron extends over ten or eleven counties, covers over 500,000 acres and is from six inches to ten and fifteen feet in thickness. It is on the very surface of the earth. Mining it will amount to no more than the cost of picking it up and putting it in piles; in fact, it can be gathered up with ordinary scrapers or steam shovels. The thickest deposits of this iron are in Houston and Henderson counties, on the left bank of the Trinity river.

Co-extensive with the iron deposits there is an abundance of the best limestone for fluxing and the finest varieties of timber for charcoal.

The excuse heretofore made for failure to develop the iron industry of Texas has been that there was no coal in the State, and the cost of bringing it from the mines of Indian Territory would be so great that the business could not be made to pay. The extensive coal deposits of the tertiary era, which extend entirely across the State, from Red river to the Rio Grande, at right angles to the cross timbers, were until recently generally supposed to be a worthless quality of coal. These coal beds, through which the Trinity river cuts its way for a distance of 250 miles, frequently show a thickness of ten to fourteen feet in a single bank, with a total thickness in many localities of from eighteen to twenty-four feet. Dr. J. L. Riddell, in his "Observations on the Geology of Trinity County, Texas," says: "The best places for inspecting the coal formations are where the Trinity river cuts its way through the highlands, or where the banks present themselves in bold, high bluffs, as at New Cincinnati, and near the projected town of Osceola. The proportion of carbon is 47 per cent. The volatile portion consists of bitumen, creosote, pyroligneous acid and water. Upon burning one hundred parts of the coal, there remained a trifle more than one part by weight of white ashes. The color of this coal is a dark umber brown. It is readily ignited, burns with a pleasant flame, and with almost the same facility as charcoal. Although it has much less bitumen in its composition than Pittsburg or cannel coal, it will yet prove valuable for nearly all purposes for which coal is applied, such as domestic use, the reduction of ore and the generation of steam-power. This sort of coal is denominated brown coal or lignite by mineralogists. Sometimes it is called 'Bovey' coal, because a thick bed of it has long been known at Bovey, near Exeter, in England. It occurs in many parts of the world, in some places in vast abundance, but generally in beds of far less extent than those of the Trinity river. It is worthy of remark that iron pyrites, generally found in coal, is here rarely observed."

Many experiments have been made in burning this coal, both in stationary boilers and in locomotives, and where the person in charge has recognized the character of the fuel, even with the drawbacks of fire-boxes not suited to it, the results have uniformly been highly satisfactory. Among such experiments may be mentioned the mills and gin at Bastrop, experiments by J. A. Cushman at Houston, the experiment of the International & Great Northern Railroad, the long-continued test of the mills at Corsicana and many others, as well as its actual use at present in considerable quantities in San Antonio, at Rockdale, Austin, Waco and Dallas. The chief reason this coal has not been brought into more extensive use is owing to the difficulty in getting a proper supply at suitable figures. This in turn is due, in part at least, to the fact that the number of actual consumers is too small either to warrant mining on a large scale or to secure from the railroads the low rate of freight necessary to properly introduce it.

In providing for the recent geological survey of the State, in order that it might be as thorough and complete as possible, the legislature made an extra appropriation to send Prof. Edwin T. Dumble, State geologist, to Europe to visit the principal brown coal deposits in Germany and Austria, and compare the different varieties that are extensively mined there with the varieties found in Texas. Professor Dumble has just submitted a report of the results of his examination of the mines in Germany, Austria, Bohemia and Italy, together with the purposes for which this coal is used in Europe. He says that the tendency of brown coal to slack, which is such a great obstacle to its use here, is overcome in Europe by having grates and furnaces specially adapted to the use of this coal in its raw state. With these appliances this coal has been found not only well adapted to heating boilers, etc., for industrial purposes, but stoves for household use, for metallurgical and industrial heating of all kinds, and even for locomotives. In fact, he says that in Europe the general use of this coal is no longer an experiment, and that its utilization is there constantly on the increase, in proof of which he introduces officia statistics from Germany, Austria and Italy.

In speaking of Texas coal Professor Dumble says: "For manufacturing, where an extremely low-priced and effective fuel is required, the raw brown coal must come into general use. Its abundance and distribution are such that it can be delivered in all manufacturing centres and on the coastal slope at such a price as cannot be duplicated, value of work considered, with stone coal, wood or any other fuel accessible to use. * * * In metallurgy its use, when raw, can be greatly increased in combining it with coke in the smelting

of iron ores and the production of pig iron. Such a combination containing from 30 to more than 50 per cent. of brown coal is entirely feasible."

The very favorable report of Professor Dumble on the value of this coal, which comes at a time when public attention is directed to the development of the resources of the State, has given rise to the belief among the people that after all there may be more things on and under the earth in Texas than were dreamt of in former estimates of the wealth of the State.

The development of the vast coal and iron resources of Texas only await capital and transportation. In turn, cheap and easily-accessible fuel will give a new impetus to the manufacturing movement which extends all over the State.

W. S. A.

The Investor's Opportunity.

By Richard H. Edmonds.

"The time to buy is after a panic" is an old saying that we occasionally hear, the credit for which is generally given to Jay Gould. Whether Gould was the author of this or not matters not. It is true in many cases, and so it is immaterial whether Mr. Gould first uttered it or whether it came from some less noted financial genius. It is emphatically true as relates to the South at present. For two years or more we have been passing through a financial depression which has strained the ability of many to carry properties that are intrinsically worth many times what they can be bought for today. There are mineral and timber lands, town properties, water-powers, newly-established industries, all of the best character, whose values are just as certain to advance as the growth of the United States is to continue. The laws of trade based on supply and demand, on the enormous expansion of all the business interests and the increase in the population of our country, make certain a steady increase in the value of well-selected Southern properties.

With our population growing at the rate of 1,750,000 a year, or about 18,000,000 during the next ten years, almost equal to the present population of the fourteen Southern States; with an enormous increase in the consumption of timber, iron and steel and coal steadily going on, there can be no question but that all first-class well-located mineral and timber properties must appreciate in value very materially. The more the South has been studied and the more closely the effect of the panic upon its industrial interests has been watched, the more deeply impressed with the wonderful resources and the great future of this part of our common country have been the moneyed people of other sections. Here is a country of boundless natural wealth—a country which will inevitably develop very rapidly—and where great fortunes are going to be made, not only by active operations, but also simply by the "unearned increment" of land, about which we hear so much these days. The wise man who has money to invest will invest it now, before the reaction from the two years of depression takes place. Property of all kinds in the South, improved and unimproved, city and country, can be bought at a very much lower price now than it will command a few years hence. The scarcity of money and the difficulty in meeting deferred obligations during the last year or two make many holders of many very valuable properties willing to sell at a very much lower price than they would have accepted a few years ago, and very much below the real value of the property.

It will not do to buy anything that is offered simply because it looks cheap; neither will it be wise to discard without investigation any property because it is "too cheap to be good." There are many things, including water-powers and mineral and timber properties of great intrinsic value, which at times can be had for a small fraction of what they are really worth. There are well-located industrial enterprises started without sufficient capital which can be bought for one-half or even less of the original cost. Timber and coal properties which in a few years will rank in selling value with similar properties in the North and West can in many cases now be purchased at prices ranging all the way from a couple of dollars to ten dollars an acre, the latter figure being sufficient to secure some of the finest undeveloped coal tracts in the entire country, while the former will cover the cost of a good many valuable timber tracts. Opportunities for the establishment of new industries on the most favorable conditions are without number. If you want to build a cotton mill—a business which must necessarily move South, where the profits are uniformly, under good management, very large—you can secure from dozens of well-located places exemption from taxation for ten years, a free site, in some cases a bonus of land which, with the natural growth of the town, will in a moderate length of time be worth almost as much as the mill cost, free clay for making the bricks for the mill and many other inducements. The mill is built simply because it would be a money-making enterprise without any of these favors, but these inducements so readily given make it doubly profitable. Iron-making must constantly increase, even if prices have been low for two years—and the South certainly has greater advantages for this industry than any other section—and if you want to build a furnace, a rolling mill or any ironworking enterprise you can secure concessions which will go a long ways towards returning the entire investment whenever general business revives. In woodworking interests, and, in fact, in every line of productive employment, inducements of the most liberal character in the way of tax exemption, land bonus, etc., can be had.

The South wants the aid of outside capital to establish new banks, to open coal mines, to build factories, and, in general, for every branch of investment which will bring about the utilization of its boundless stores of wealth that furnish a sure foundation for vast business interests, for profitable railroads when operated for business rather than for Wall-street wrecking, and for the upbuilding of many industrial centres, large and small. And now is the time for investments in that section which will yield large returns if judiciously made.

West Virginia at the World's Fair.

Although the West Virginia legislature made only a meagre appropriation for the collection, classification, maintenance and care of an exhibit at the World's Fair, that State will show up at Chicago with as fine an exposition of natural resources as any State in the Union. Her agricultural exhibit may not compare favorably with those of some other States, and her manufactures may not be so diversified, but her exhibit of lumber and minerals, however, will be the envy of all the States.

The board of World's Fair commissioners of West Virginia, with headquarters at Parkersburg, in charge of President W. N. Chancellor, has been actively at work for nearly two years making the collection and arranging for the exhibits. One of the first points of interest will be the West Virginia building. It is a thoroughly characteristic structure throughout, built entirely of West Virginia woods and stone. In it will be seen some of the State's best hardwoods brought to the highest possible finish and displaying their possibilities. The doors and other woodwork have been furnished by various lumber firms, and each has vied with the other to make its particular piece the brightest and best. The most interesting part of the timbering exhibit, however, will be in the forestry building, and will include rough and finished samples of all the merchantable hardwoods that grow in the State. These are now being received at Parkersburg, and are contributed by individual lumber operators, the State giving assistance where it is desired and necessary. The samples come in logs, planks, boards, panels and every conceivable shape, rough and finished. These woods are classified and arranged by a botanist so that they will make the best appearance and be readily picked out by those seeking any special variety.

A correspondent of the MANUFACTURERS' RECORD was allowed to view a part of this exhibit which is now collected at Parkersburg. Among the samples so far received which will appear in the forestry building are blister pine, soft maple, striped maple, red maple, sugar maple, black sugar maple, buckeye, purple buckeye, service, green alder, pawpaw, red birch, white birch, river birch, water beech, Hercules's club, Dutchman's pipe, mountain holly, prickly ash, black haw, red elm, American elm, hemlock, American lin, lin, arbor vitæ, sassafras, willow, black willow, white willow, locust, honey locust, sumach, rhododendron, red oak, chestnut oak, swamp oak, black oak, rock oak, burr oak, laurel oak, Spanish oak, white oak, crab, cherry, roundwood, trembling asp, cottonwood, big-tooth asp, sycamore, white pine, pitch pine, yellow pine, black spruce, red gum, ironwood, black gum, box elder, mulberry, umbrella tree, Indian bark, cucumber, yellow and white poplar, sweet gum, laurel, cedar, black walnut, butternut, holly, white hickory, pig hickory, bitter hickory, shag-bark hickory, witch hazel, silver bell tree, American mahogany, white ash, black ash, green ash, hoary ash, beech, persimmon, scarlet thorn, kinnikinnik, flowering dogwood, alternate dogwood, chinquapin, chestnut, hackberry, red bud, fringe tree and a large number of less importance to commerce.

It will be seen from the above list that West Virginia possesses more different varieties of merchantable timber than are allotted to most sections, and the exhibition of them and the fact that comparatively only a small portion of her area has been cleared out will undoubtedly result in great benefit to her leading industry. Besides the State exhibit the West Virginia & Pittsburg and the West Virginia Central & Pittsburg Railroads will have exhibits of their own, as will a number of saw-mill and timber-land owners. Senator Johnson N. Camden, the Parkersburg Mill Co., L. W. Nutall, the Dawson estate, Welsh Bros., J. L. Rumbarger and others have either prepared private exhibits or have contributed splendid specimens to the State exhibit. Senator Camden has gotten out a poplar log which measures thirty feet in circumference which is now lying on Camden-on-the-Gauley and which will be shipped to Chicago direct. It is thought that, except the big California redwoods, no log as large as this will be offered. The Parkersburg Veneer Co. has contributed panels of hazelwood, ash, walnut, cherry, plan oak, quartered oak, figured birch, quartered sycamore, bird's-eye maple, figured walnut and 300 feet of poplar veneer. The panel-sized contributions from elsewhere are dressed at Parkersburg and finished at Chicago. They will be arranged in a cabinet, and some of the samples at President Chancellor's office indicate that they certainly will be rich and beautiful.

After the timber display West Virginia's next most interesting and instructive display will be from her coal mines and coke ovens. While it is not possible to make it as artistic or immediately beautiful a picture of black diamonds as of hardwoods, West Virginia's display, including as it does every known kind of coal, will be as nearly perfect as such a display can be. President Chancellor has received at his office hundreds of samples of the various kinds and qualities of coal found in the various parts of the State, and so numerous are they that it is not likely that room can be found for nearly all of them. Most of the samples come in the form of small cubes, but some big lumps, irregular in shape and showing splendid tints, have been received. The samples include everything from the softest bituminous to the hardest anthracite, for although anthracite is not found extensively in West Virginia, there is enough of it to make a display worth while.

Quite a number of concerns will make private exhibitions. These will be for the most part blocks of coal showing the full thickness of the seams from which they are taken. In this category seams under eight and nine feet thick will hardly be worthy of consideration, for there will be blocks of coal thirteen feet high without a parting or flaw of any sort standing precisely as it did for thousands of years under West Virginia's hills.

One concern down in the southeastern part of the State owns land under which there are five seams of coal, all of them of workable quality, above the water level. No two of these seams are alike, ranging between a 13-foot vein of soft steam coal to a 3-foot vein of hard cannel. Blocks from each of these seams will be taken out and exhibited one on top of the other in the order in which they stand in the ground. It was under contemplation for a time to transfer a cross-section of the part of the mountain containing these seams to Chicago, and erect the building stone and limestone and other strata in their regular order as they are found in the living mountain. Although this would have made a splendid display, it was found that the expense would far exceed the money at the command of the projectors.

The coke display will receive particular attention, and some of the finest samples and some that will bear all tests will be shown. West Virginia coke-makers feel that this is the opportunity of a lifetime to make a good display of their product and to refute the slurs and slanders that have been so persistently cast upon Southern coke as a whole by those interested in retarding its development and introduction.

In connection with these exhibits the fair directors are preparing a hand-book giving in regular order a complete description of each of the larger towns and the counties of the State with reference to their manufactures, commerce, natural resources and advantages, and the possibilities for development. These will be distributed in connection with the exhibit at the fair.

There will also be a large cabinet containing well-made photographs of all points of interest, beauty and grandeur in the State, including much of the beautiful scenery found in the wilder and more remote parts. The State will display a great many other beautiful and interesting things, but the coal and timber exhibits will be the central attraction, and will most forcibly illustrate her possibilities.

Another department that is worthy of more than a mere passing notice is the iron-ore display that will come from the eastern counties. West Virginia is not phenomenally rich in iron-bearing ores, but there are many beds that are of splendid quality and that will furnish remunerative investment for capital as soon as better railway facilities are afforded, which from present indications will not be long. The commissioners are making a special effort for the iron-ore exhibit, and it will be quite creditable.

BRIDGEPORT LUMBER CO., Bridgeport, Ala., writes: "Inquiries for quartered oak are being received from all parts of the country, and quite a number of them reach us through our place in your Lumber Manufacturers' Directory."

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on pages 98 and 99.]

New Cotton Factory at Florence.

The Cherry Cotton Mills, of Florence, Ala., was formally organized last week and the following officers elected: N. F. Cherry, president and general manager; Jas. M. Head, vice-president; C. M. Brandon, secretary and superintendent, and N. C. Elting, cashier. The directors are the above and Mr. Lewis T. Baxter. The plant is to be a continuation and enlargement of the Mountain Mills, located near Barton, and the negotiations for this change have been in progress for several months. Contracts for buildings have been let to H. C. Nichols, of Philadelphia, and they are to be completed by July 1st. The old plant is now operating 8600 spindles, and the new one will double this capacity, a full equipment of new machinery having already been ordered. These mills are to be equipped with every modern convenience and safeguard, including electric-light plant, sprinkler system, etc. The entire plant is expected to be completed and ready for operation by next September, and will employ 200 skilled hands. The concern is capitalized at $200,000, of which $185,000 is paid in.

New Mill at Gastonia, N. C.

The organization of a $75,000 stock company has been completed at Gastonia, N. C., and that city is the next in line with a new cotton factory project. The sum of $50,000 has been subscribed to the stock and paid in, and at a meeting held last week G. W. Ragan was chosen president, and T. C. Pegram, secretary and treasurer, of the concern. A tract of twenty-two acres of land has been purchased to be utilized as a site, and work on the buildings will commence at once. The factory will be known as the Windsor Mill, and is expected to be in operation by November next.

A Big Mill Enlarges.

The officers of the Enoree (S. C.) Manufacturing Co. have decided to considerably augment their already large plant and are now preparing to enlarge it. Plans have been submitted and adopted and work has commenced on an annex to be two stories high, ninety by eighty feet. This mill has been in operation for the past year and is now running on sheetings and drills with 26,624 spindles and 720 looms. The business abilities of Mr. G. S. Coffin, president of the company, have contributed considerable to the success of the factory. Mr. F. E. Engles is secretary and K. McGowan, mill superintendent.

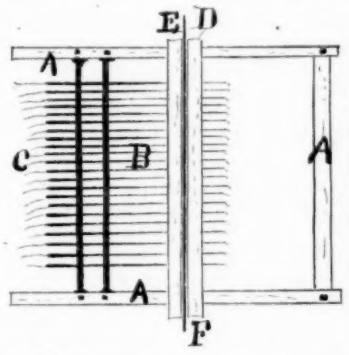
Another New Mill.

For some time past plans have been maturing at Hogansville, Ga., for the erection of a cotton factory, and have succeeded in so much that the plant can now be counted on as a certainty. The design and supervision of the plant will be under the experienced mill engineer Mr. Albert Randall, of Atlanta. The town of Hogansville is well adapted for the location of such an industry, receiving as it does about 12,000 bales of cotton each season, and having in abundance pure freestone water, so essential for boilers, also for bleaching and dyeing.

A New Weaving Machine.

A mechanic in Manchester, N. H., is constructing a very novel machine for producing a fabric. The device is different from anything ever invented for fabricating cloth at a high speed. For more than a quarter of a century men have endeavored to devise a means for doing away with the picker-stick, the picker and all that part of the loom which has to do with the throwing of the shuttle. This is because the great majority of wear, breakage, friction and noise arises from the knock and jar of the common mode of throwing the shuttle across the loom. In the new invention the picking motion is not only done away with, but a decided increase in the number of yards of cloth produced is effected. Some idea of the build of this peculiar contrivance may be obtained by glancing at the accompanying illustration.

In this the letter A represents the framework of the machine B is a lot of needles. In the sketch but one section of needles is exhibited, whereas about twenty sections go to make up the complete device. These needles are hollow. The interior is sufficiently large to admit cotton yarns, designated by C. A thread can be seen protruding from each end of all the needles. In practice the needles would get their supply of yarn from spools arranged immediately behind the letter C. While experimenting the inventor simply fills the needles with a long piece of yarn each and works till it runs out. The black bars that extend perpendicularly from the top to the bottom frame are the supports for the needles. Each needle is fixed through a hole in these supports and held there firmly. D and E are steel plates also drilled with holes at equal distances apart.



SIDE VIEW OF THE NEW WEAVING MACHINE.

F is a linen cloth which runs down between the plates. At the start the needles are all further back, and free from the steel plates E and D. The operator moves them forward till the needles penetrate the first steel plate, then the linen cloth, and finally the last steel plate; then he draws them back. As they recede the steel plates move a little so as to make a friction. This friction causes the yarn to catch in the linen fabric. Then the whole thing is stopped till the operator can lower a knife, which cuts all the threads off close to the linen fabric. This finishes the operation. The linen fabric is taken from the machine, having all the yarns in it. These cotton yarns are specially arranged so as to make complicated figures.

The machine makes floor mats, slipper patterns and the like with great rapidity. No complicated harness motion or Jacquard head is needed. It is a simple device, and will undoubtedly find a place for itself in the textile world at an early day. Of course, the yarns must be held in position after they are put in the linen fabric. This is accomplished by an application of cement on the back of the goods. The cement contains rubber, so that it is flexible. A complete square yard of needles can be operated at once, or one square foot, according to the pattern. This is a complete revolution from the prevailing systems of weaving, knitting or otherwise fabricating fancy cotton goods.

Southern Textile Notes.

THE Mountain City Woolen Mills, of McMinnville, Tenn., manufacturers of jeans and linseys, will put up this summer a large brick building 40x100 feet to make room for their growing business, and will put in new wool-washing machines, new mule spinning frames, new metallic breast in cards and possibly new burring machines. This plant has been very successful, and was established in 1873. It now has in operation twenty-two looms, 288 spindles and eighteen sawing machines. H. C. Howard is superintendent of the mill.

AN important cotton manufacturing industry is to be established at New Orleans, La., some time during the summer. English capitalists are said to be interested.

IT is reported that Mr. Geo. P. Ide, of Jacksonville, Ala., has completed arrangements for the erection of a cotton factory at that place. Over $200,000 is said to have been subscribed.

THE Hamburger Cotton Mills, of Columbus, Ga., noted last week as having purchased the Paragon Manufacturing Co.'s mills for $53,000, will move their machinery to the Paragon plant and then add enough spindles to supply all the looms with yarn.

THE possible increase of the machinery of the Maginnis Cotton Mills at New Orleans, La., has been spoken of without any definite action having been taken regarding it. The plant turns out sheetings, shirtings, drills, osnaburgs, etc.

IT is reported that Mr. W. P. Hart, of Forest City, N. C., superintendent of the Florence Mills at that place, is endeavoring to arrange for the erection of a cotton-yarn mill to manufacture carpet warps in skein.

THE managers of the Windsor Knitting Mills at Hagerstown, Md., contemplate putting in additional machinery in the near future. They are now operating forty machines and turn out 800 dozen half hose per week.

TWO hundred and fifty thousand spindles have resumed operation in the Oldham district, England, the operatives accepting the 2½ per cent. reduction. The Manchester master-spinners will not compromise with the spinners, and are still adhering to their demand for a 5 per cent. reduction.

J. W. ALSPAUGH has purchased the entire plant of the Crown Cotton Mills at Greensboro, N. C., and is operating same. The plant contains 6000 spindles and turns out yarns, and is in the sole charge of Mr. D. G. Devenish.

LEXINGTON, N. C., will soon have another new cotton factory. Mr. Geo. W. Montcastle writes us that a joint stock company has been organized and intends building a 5000-spindle plant. The concern is made up largely of experienced manufacturers.

THE Wenonah Cotton Mills, of Lexington, N. C., are at work on the new addition which they decided upon some time ago. The addition will contain 130 looms.

BIRMINGHAM (Ala.) citizens will endeavor to form a company for the erection of a cotton mill, shares to be paid for on the instalment plan.

COL. H. S. CHADWICK, of Providence, R. I., and Capt. F. P. Randle, of Roanoke, were in Opelika, Ala., last week with a view to locating a cotton factory there. Captain Randle is an experienced cotton manufacturer, having been in that business all his life. He will make the citizens a proposition for the erection of a plant.

THE Gaffney (S. C.) Manufacturing Co., which recently started up a new mill, has doubled its capital stock, making it $200,000. The new enterprise has already commenced with bright prospects, and will undoubtedly be a success.

AFTER an idleness of nearly eight months the North Athens (Tenn.) Cotton Mills have resumed operations. When in full running capacity about 300 people will be employed.

MESSRS. W. D. GRIFFITH AND HENRY LOVERN'S proposed new factory at Athens, Ga., will likely be started in a couple of months. It is to be known as the Alpha Mills and will manufacture rope. Lovern and Griffith are now in the North purchasing outfit of machinery.

WORK on the buildings for the new cotton factory at Bessemer City, N. C., is being pushed rapidly. The main building is 80x550 feet, two stories high, and the plant is intended to manufacture fine dress goods. The company has obtained charter from the legislature, with the following incorporators: J. A. Smith (president), J. A. Pinchback, R. C. G. Love, F. A. Cammock, B. L. Duke and others. The capital stock is placed at $200,000, and the concern will operate as the Bessemer City Cotton Mills.

Remunerative Farming.

A correspondent of the Charleston (S. C.) *News and Courier* writes to that paper from Ninety-Six as follows: "There are a great many farmers throughout the State who seem to think that there is no ready money in anything except cotton. Now, in order to relieve those who are laboring under this impression, I desire to call their attention to the various crops produced last year by Mr. H. P. Galphin, a prosperous farmer of our town. The lands cultivated are the old Cambride lands within a mile of this place. Mr. Galphin has just furnished me with the following statement, and therefore it can be relied upon as correct. He says he produced last year with three mules the following crops:

On 40 acres, 800 bushels corn at 65 cents	$520
And 8000 bundles of fodder, estimated	100
On 50 acres, 25 bales of cotton at $35 per bale	875
On 75 acres, 1700 bushels of oats at 50 cents	850
On 25 acres, 1600 bales of clover hay at 75 cents	1200
On 5 acres, 400 bales of pea-vine hay at 50 cents	200
Grand total for all crops	$3745

"It will be seen from the above table that the clover crop is far more valuable than either of the other crops. He realized nearly twice as much from twenty-five acres in clover as he did from fifty acres in cotton, besides there is very little expense attached to its production. Every farmer should have his barn filled with clover hay. It is an excellent feed for all stock, especially cattle. Milk cows thrive on it. It increases the flow of milk and produces beautiful rich yellow butter. Mr. Galphin has fattened and killed several fine hogs, and says that he has plenty of this valuable and indispensable article of food to supply him this year.

"I did not ascertain from Mr. Galphin the amount of his expenses incurred in producing these crops, but it would be safe to say that he cleared over and above all expenses at least $1000 to the mule, which must be admitted by all as very fine farming. If every farmer would adopt Mr. Galphin's plan we would have no use for the Alliance nor the Ocala platform, the sub-treasury bill or nothing of the kind, but would be a happy, independent people, and the cry of oppression and hard times would be a thing of the past. I simply give this, hoping that it may prove beneficial to some poor farmers at least who have been sticking to their cotton idol in neglect of all other crops.

"Just before mailing this Mr. Galphin asked me to add, in addition to the above crops, that he made thirty bushels of barley and 100 gallons of sorghum."

NOTICE is given to mariners that on February 20, 1893, a fixed white lens lantern was established on the square black pyramidal skeleton structure one and three-quarters miles southeast by south from Mangrove Point, the point of division between Myacca river and Peace creek, Charlotte Harbor, Fla. On the same date a fixed red lantern was established on the square red pyramidal skeleton structure on the south side of Peace creek channel, Charlotte Harbor, Fla.

PHOSPHATES.

The Phosphate Mines of Canada.*

By H. B. Small, Ottawa, Canada.

II.

A curious feature in the Canadian phosphate trade is the fact that, although a large amount of American capital is invested in Canadian mines, almost the whole of their product is shipped to Great Britain and the European continent, a trifling quantity only finding its way to the United States. Considerable crude phosphate and a large amount of superphosphate are imported into the United States from Great Britain, and there is every reason to believe that both these articles are Canadian products reshipped. Mr. Torrance, a phosphate expert, gives as his idea of the reason of this anomaly that American dealers were in the habit of importing from Britain long before Canadian deposits were worked, and that no effort has since been made to direct into fresh channels the trade from Canada, which was commenced with the English market by men more familiar with that than with the American. The late Dr. Sterry Hunt, in a paper entitled "Studies of the Apatite Deposits of Canada," read before the American Institute of Mining Engineers at Halifax, remarked that in the near future a large market will be found for this material in the United States. The growing demand for high fertilizers on this continent, and the fact that the apatite of Canada may be shipped to the valleys of the Ohio and Mississippi at much lower rates than the phosphate rock of South Carolina, give great importance to these Canadian mines.

The large increase in the annual output of the more important mines is evidence that Canadian phosphate is coming more and more into demand as the mineral becomes better known. The high grade of this phosphate has brought it into favor in Belgium, Denmark, France and Germany, in which countries there is an increasing consumption, consequent on the widespread cultivation of the sugar beet, for which superphosphate is found to be an admirable fertilizer. In England there is a wide market for it. The objections which Canadian phosphate encountered at first and the difficulties of introducing material from a new source have been overcome. A low grade of Belgian phosphate is found to combine well with Canadian under chemical treatment. There is a question as to the continuance of the supply of Spanish phosphate, which, with the high cost of the Norwegian article, favors an increased demand for the supply from Canada.

Besides the phosphate-bearing districts of the Province of Quebec described above, there is also a phosphate region in the Province of Ontario, occupying that portion of the country lying back from Kingston and Belleville, which extends in a belt through the townships of Burgess, Crosby, Bedford, Storrington and Loughborough, in the county of Hastings. A large number of surface openings exist in this belt, some of which are worked with fair returns, but no deep mining has been carried on. While the productiveness and easy accessibility of the Lievre mines have caused the neglect of the earlier-discovered deposits of the Hastings district, there are among these some which when properly developed will probably be found not inferior to those on the Lievre. So far as is known at present, however, the grade of phosphate is not as high as that of the Quebec mineral, and the amount shipped from Kingston is comparatively small.

Dr. Sterry Hunt, who made Laurentian rocks his study for upwards of thirty years, regards many of the apatite veins as fissures or cavities which have been filled by the deposition of materials derived from the adjacent strata. One striking feature developed in this mining is the great irregularity of the deposits, but taking into consideration the extremely disturbed character of the Laurentian rocks, this is not to be wondered at. What may at one time have been layers, regular and uniform, subsequent disturbances and upheavals have folded over and twisted and dislocated till in one place the matter has been compressed into the narrowest of seams, only to swell out further on, giving the appearance of huge pockets, apparently isolated, if the connecting vein be not traced or traceable.

Statistics of Production.—Some idea of the magnitude this business is assuming may be gathered from the following returns showing the exports of phosphate from Canada since 1878, when the industry may be said to have been fairly launched:

Year.	Tons.	Value.
1878	10,743	$208,109
1879	8,446	122,035
1880	13,060	190,086
1881	11,968	218,456
1882	17,153	308,357
1883	19,716	427,668
1884	21,709	424,240
1885	28,969	496,293
1886	20,440	343,007
1887	23,152	433,217
1888	18,776	298,609
1889	29,987	394,768
1890	28,457	499,369
1891	15,153	119,532
Total	267,729	$4,483,746

Of the above, 17,744 tons were shipped from the Province of Ontario, and the figures of exports from Quebec include a certain amount produced in Ontario, but shipped to Montreal for export, and at that port credited to the Province of Quebec.

Owing to a depressed market the shipments in 1892 fell off considerably. The complete returns are not yet announced.

That there is room in England for all the phosphate Canada is likely to produce is shown from the following table, taken (except the percentages) from British returns:

IMPORTS OF PHOSPHATE INTO GREAT BRITAIN.

Year.	Total imports. Tons.	From Canada. Tons.	Percentage from Canada.
1882	223,394	9,169	4.1
1883	276,578	18,514	6.7
1884	245,532	17,603	7.1
1885	272,200	24,062	8.1
1886	249,884	20,237	8.1
1887	317,424	21,497	6.7
1888	288,832	13,913	4.8
1889	341,547	25,898	7.5
1890	384,721	23,619	6.1

The official returns for 1891 have not been obtained.

Mr. Obalski, government mining engineer of the Province of Quebec, in a paper read by him in October last, says:

Recent important discoveries in different places in Europe and the United States have caused a variation in the price; but, nevertheless, we can say that the Canadian phosphate, considering its high average (80 per cent.), will have a regular market; and I consider that if the production is not greater, it depends more on the irregularity of the deposits than on any other cause. Up to date the production has been some 250,000 tons. There exist large deposits not yet worked on account of the absence of easy means of transportation.

The depression in the European market is evidenced by the very limited extent of the phosphate mining operations in this district. The High Rock mine,† with a reduced force of about sixty men, has raised about 3000 tons of all grades to date, about 2000 tons of which have been exported. The Squaw Hill and Ætna mines of the British-American Phosphate Co. are the only other mines now worked to any extent. Recent operations reveal some fine shows of the mineral, and the management are reported to be encouraged by the prospects.

Whether phosphate in its crude state, pulverized, is available as plant food has not been as yet fully ascertained, although the results of experiments go to show that when mixed with strong fermenting stable manure or with swamp muck, its effects are manifested in the former case rapidly, in the latter more slowly. The same results have been obtained with Charleston rock. There are only at present three manufacturers of fertilizers in Canada—in New Brunswick, Quebec and Ontario, respectively. Almost the entire product of the crude material, however, is sent out of the country.

Cost of Mining and Transportation.—Information gathered from various sources as to the cost of a ton of phosphate delivered in Montreal, compared with that stated in the latest Quebec government report on mining and minerals,‡ gives the following figures:

Extraction (profitable average) $3.00 to $6.00.

Transport to wharf over a distance of one to five miles, by cart, twenty-five cents to $1.25.

Transport to wharf over a distance of one to two miles, by tramway, twenty cents.

Transport by river in barges over a distance varying from ten to twenty-five miles, thirty to sixty cents.

Cost of transhipment at Buckingham, ten cents.

Transport by railway from Buckingham to Montreal, $1.25 to $1.50.

Cost of transhipment at Montreal, twenty-five cents.

Commission, insurance, etc., fifty cents.

Ocean freights range from five to twelve shillings sterling, according to the port of destination, Hamburg being the most distant to which phosphate has been shipped hitherto.

Wages.—The rate of wages is from $15.00 to $25.00 per month, with board, and by the day ninety cents to $1.25, without board, for ordinary laborers, and $1.50 to $2.50 for foreman and machinists. A team and driver average $3.00 per day.

Mills.—There are three mills for grinding phosphate run by the water-power of the Lievre river, near Buckingham Station, viz:

One belonging to the Canadian Phosphate Co., with a capacity for turning out six to seven tons a day.

One at Seabury, on the west side of the Lievre, run with a turbine wheel and equipped with a rotary driver capable of treating twenty-five tons a day.

One belonging to Lomer, Rohr & Co., with a capacity of from forty to fifty tons a day.

*A paper presented at the Montreal meeting of the American Institute of Mining Engineers.

†The property belonging to the High Rock mines, worked by the Phosphate of Lime Co., of London, England, under the management of Mr. Pickford, covers 1200 acres, and these mines have been probably the most successful in their operation. At one time the number of hands employed was upwards of 200, and every means were used to promote their welfare, even to a reading-room well suppled with books and periodicals. The number of the hands at any of the mines varies with the demand for the material.

‡"Mines and Minerals of the Province of Quebec," by J. Obalski, government mining engineer, Quebec, 1891.

English View of the Phosphate Outlook

The January phosphate circular of the Anglo-Continental (late Ohlendorff's) Guano Works, of London, England, gives a lengthy review of the phosphate markets of the world. The circular says: "Last year the price of phosphate probably reached the lowest point ever known, and as there cannot be any doubt that almost all phosphate raisers are at present working at a loss or without profit, we trust that the year 1893 will bring an improvement in the interest of all concerned. Consumers of phosphate do not and cannot expect miners to work at a loss, and low prices are generally as disastrous for the manure manufacturer as they are for the miner. It is for the phosphate miner to endeavor to avoid overproduction, and after conflicting interests have found their level, it is probable that senseless competition will cease and that steady prices will follow, which are what the buyer would, on the whole, prefer.

"Florida has been the disturbing element for the last two years, but now that the uncertainty as to its power of production has vanished and the merits of its quality been recognized, it will retain its position as the most important factor in the phosphate market. South Carolina has endeavored to shake off the competition of newcomers from the sister State, and through the opening of the Coosaw river a state of affairs has been produced which was only aggravated by an undoubted restriction of consumption in America as well as in Europe, so that unprecedentedly low prices have been the result."

The circular comments freely upon Florida high and low-class river phosphates, showing the receipts of the latter in Europe to be very large during the last six months of 1892, the reduced prices of low-class river phosphate having caused a better demand. "One thing is, however, certain—that the demand for high-class phosphate is much more limited than that of river or other low phosphates. Even in Germany the low-grade phosphate finds more and more favor, and it is very doubtful whether a possible increased output of high-grade phosphate in Florida will find an easy outlet in Europe."

In closing the circular quotes manufacturers as having bought freely, and large stocks have been carried over into the new year, which will somewhat prevent an immediate improvement.

Importations of phosphate into the United Kingdom for 1890, 1891 and 1892, with exports for 1890 and 1891:

From	1890.	1891.	1892.
Florida / South Carolina	177,283	35,203 / 96,881	66,327 / 135,138
British West Indies	3,970	1,960	2,473
Dutch West Indies	14,763	8,851	6,648
Hayti and San Domingo	992	1,639	2,965
Venezuela and Guiana	.....	540	.....
Canada	21,089	15,918	7,814
Portugal	.....	320	971
France	35,659	18,325	18,239
Belgium	82,096	70,723	65,079
Holland	2,428	3,434	6,627
Norway	4,151	1,495	305
Other countries	1,070	1,483	1,594
Total	343,501	256,772	314,180
Exported	8,311	4,414	.....
Remaining for U. K.	335,190	252,358	.....

Dunnellon Phosphate, Railroad & Transportation Co.

OCALA, FLA., February 25.

As the season advances there is a more active movement among phosphate men, and all the miners around this section are making active preparations for a large output of phosphate rock in 1893. The phosphate industry has had a wonderful effect upon trade in this city, and buildings and improvements in almost every quarter are in progress. The latest piece of news in railroad circles is the incorporation of the Dunnellon Phosphate, Railroad & Transportation Co., with headquarters at Ocala and New York. The incorporators are John L. Inglis and Ralph Barker, of Madison, Fla.; Hugh D. and John W. Auchincloss, of New York city; W. L. Bradley, of Boston, and James M. Schumaker and J. R. Tysen, of Jacksonville, Fla. The proposed line is to extend north from Dunnellon to the Early Bird phosphate mine in Marion county, say twelve miles, and is to be continued north to Amelia island, on the St. Mary's river, Fla., and south from Dunnellon to a deep-water point on Tampa bay. The company is also to construct telegraph lines, steamboats, etc., and the capital stock is $100,000. Another corporation is about to establish itself in Marion county, and proposes to construct a macadamized road from Ocala to Silver Springs. The incorporators are Dr. Chas. W. Torcey, Allen Rogers, Joseph Moorhead, E. L. Root and George W. Lyons, with a capital of $25,000. The railroad, public road and other improvements contemdlated will cause considerable capital to circulate in Marion county, and there never has been

a period in the history of the phosphate industry when investors are seeking with more energy for phosphate territory than at present. The Early Bird Phosphate Mining Co. has contracted with the Merrill-Stevens Company for a 100-ton washer. The Plant system, in the possession of the Silver Springs, Ocala & Gulf Railroad, has established here an up-town ticket office, with H. G. Haycraft in charge. Among the visitors to Ocala during the week was Mr. Paige, of the famous London phosphate firm, who was a guest of Mr. B. Arentz, broker and phosphate shipper.

Large Phosphate Shipments.

FERNANDINA, FLA., February 25.

Receipts of phosphate rock at this port are very liberal at present, and the various mining companies are rushing their product to market very freely. There is a better feeling among phosphate shippers and dealers, business for the current month being materially larger than for January. The shipments of phosphate in February, 1892, were unusually light, being only 5880 tons, and for the current month it is stated that the exports of phosphate rock will reach nearly 20,000 tons. Outside of the business in phosphate other industries will be well represented, and in lumber the shipments to Europe, the West Indies and South American ports will be very liberal in volume.

Florida Phosphate at the World's Fair.

The Florida phosphate exhibit at the World's Fair in Chicago promises to be a valuable and interesting one under the supervision of Mr. Thurman, who was appointed by Governor Fleming to take charge of the exhibit of the mineral products of the State. In a recent interview Mr. Thurman gave a brief sketch of the nature and progress of the work in hand. The space in the mines and mining building will be twenty-five feet square, and the pebble phosphate will be displayed in glass jars and tubes which will be arranged in a cabinet that will delineate the outline of the State. Hard-rock phosphate in bulk will form the superstructure of the exhibit. On this will stand a cabinet about seven feet high, and this cabinet will contain over 600 jars, each jar being labelled with the name of the owner of the phosphate or other mineral, its locality and average analysis. The walls will be adorned with maps of the State and mineral-producing counties with geological maps showing the course, extent, location and character of the various mineral deposits. Mr. Thurman will leave Florida for Chicago about the 1st of April and remain during the fair looking after the mineral interests of the State and the extension of Florida's phosphate deposits.

Couper, Millar & Co.'s Circular.

All advices in reference to the European fertilizer market show considerable depression existing in phosphates both in the United Kingdom and on the Continent, this depression arising from the cheap transatlantic freights. The outlook for the consumption of fertilizers is better, and the demand will be in excess of last year. Messrs. Couper, Millar & Co., of London, say in their circular of the 17th inst.: "The shipments of phosphates last year to the United Kingdom from all sources were considerably in excess of those of the previous year, and the imports into France also show an increase, while the exports of French phosphate shows a great diminution." In their quotations South Carolina phosphate is at six and a-half cents per unit; Florida hard rock, 75 per cent., is firm at eight to eight and a-quarter cents; river pebble, 60 to 65 per cent., steady at seven cents, and land pebble, 70 per cent., is held for seven and a-quarter cents. In bone ash, bones and meal quotations are nominal at £3 to £3 5s. for ash, £4 to £4 2s. 6d. for bones, and bone meal rapidly advancing, £4 15s. being quoted for good quality. It is anticipated that there will be but a reduced supply of the latter material this year. Sulphate of ammonia is rising in price, today's quotations being £10 10s. per ton. Nitrate of soda is firmer at £9 15s. per ton in dock warehouse. In ammoniacal materials fish guano, London make, is in good demand, but very scarce, and well sold forward at 9s. to 9s. 3d. and 1s. per unit, respectively, of ammonia and phosphate. Ground hoofs and horns are held for 8s. 9d. per unit ex steamer London.

Punta Gorda a Port of Entry.

The revenue steamer McLane arrived at Punta Gorda, Fla., on the 20th instant with Capt. John F. Horr, collector of customs of Key West, on board. Collector Horr, by direction of the Secretary of the Treasury, duly installed B. F. Camelly special deputy collector of customs at this port. Ships from foreign and domestic ports can now enter, clear, pay duties and tonnage dues, etc., instead of going to Key West for that purpose.

Phosphate Markets.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, March 2.

In the local phosphate market there is only a moderate business in progress, and the volume of transactions during the week has been light. Manufacturers are well supplied at the moment, and there is only a demand for future delivery. Advices from Europe are unchanged; South Carolina phosphate quoted on the 17th inst. at 6½d. per unit, and Florida hard rock 75 per cent. firm at 8d. to 8¼d. per unit, while river pebble 60 to 65 per cent. was steady at 7d., and land pebble 70 per cent. held at 7¼d. There are no charters reported from this port during the week, and arrivals of phosphate rock from producing points are as follows: Schooners William Neely, from Port Royal, S. C., with 1368 tons; Florence C. Magee, from Tampa, Fla., with 1550 tons; W. Lorman Roberts, from Punta Gorda, Fla., with 1025 tons, and the Robert G. Dunn, from Bull river, S. C., with 950 tons; total, 4893 tons. The list of values is unchanged, and the market closes steady, as follows: Ashley river rock is quoted $4.75 and Charleston at $5.00, and for future delivery $3.50 to $3.75 for 50 to 55 per cent. product. Florida river pebble 60 per cent. product $3.75 to $4.00 f. o. b., and land pebble 67 to 70 per cent. product $4.75 to $5.00 f. o. b. Florida hard rock 75 to 80 per cent. product is quoted $7.50 f. o. b. Fernandina.

FERTILIZER INGREDIENTS.

The tone of the market continues very firm, with an active demand on the spot and for future delivery. The offerings are in most cases very light, and the market in some ingredients bare of stock. We quote: Blood, 3.00 to 3.20 per unit f. o. b. Chicago; tankage, 7 per cent. of ammonia and 20 per cent. bone, $32.00 to $33.00 Baltimore; brimstone, best unmixed seconds and thirds, $18.50 to $19.50; nitrate of soda, 2½ cents per pound for spot and 2.20 to arrive; ground bone, $28.50 to $31.00 per ton of 2000 pounds; dissolved South Carolina phosphate rock, $11.50 to $12.50 per ton in bags for car lots; dried fish scrap by cargo, $28.00, and job lots, $30.00 to $32.00; ground, $36.00 to $36.50; wet and acidulated, $18.00 to $20.00; dissolved bone black, 18 per cent., $20.00 to $22.00; dissolved bone ash, 18 per cent., $20.00 to $22.00; kainit, $11.50 to $12.00 per ton of 2000 pounds in bags; muriate of potash, $1.85 per 100 pounds for spot goods of 80 per cent.

CHARLESTON, S. C., February 27.

The general phosphate market rules quiet, with the volume of business light. Advices from Europe are a shade better in tone, and there is every prospect of a fair demand for river rock. Land rock in foreign markets continues in light demand at the moment. The exports from this port during the week are very light, and at this date are not as large as last year. Phosphate freights are nominally steady without change, the rates being as follows: Ashley river to New York $2.25, Richmond, Va., $1.90 and Baltimore $1.80. Prices at the close of the week rule steady, with a better demand from Northern ports. Crude rock is quoted $3.75 to $4.00 f. o. b., hot-air-dried $4.75 to $5.00 f. o. b. and ground rock $7.50 f. o. b. in bags. The comparative exports of crude phosphate rock and ground from the port of Charleston from September 1, 1892, to February 24, 1893, and for the same time in 1891, are as follows:

Destination.	1892-93.		1891-92.	
	Crude.	Ground	Crude.	Ground
Baltimore	18,955	.....	26,041	.....
Philadelphia	9,606	.....	8,564	.....
Boston	.....	.....	.....	.....
Elizabethport	.....	.....	.....	.....
Wilmingt'n, Del.	2,078	.....	600	747
Barren Is., N. Y.	.....	.....	1,673	.....
New York	5,457	1,641	5,658	1,613
Mantua creek	1,319	.....	2,057	.....
Weymouth	6,940	.....	8,725	.....
Richmond	4,449	.....	3,851	.....
Seaford, Del.	600	.....	600	.....
Newton ck., N. J.	1,078	.....	1,078	.....
Wilmingt'n, N.C	665	.....	450	.....
Welsh Point	.....	.....	.....	.....
Orient, L. I.	.....	.....	1,890	.....
Other ports	2,790	.....	2,490	300
Total exports.	53,937	1,641	63,677	2,660
By railroads	.....	.....	35,600	1,613
Foreign ports	175	.....	442	.....
Grand totals	54,112	1,641	99,719	4,273

FERTILIZER INGREDIENTS.

There is a firm tone to the market for fertilizer ingredients, and the demand is urgent, with the offerings in some cases very light. Manufacturers are still shipping freely, and stocks are firmly held under the free current demand. For ingredients values are as follows: Kainit, $12.50; acid phosphate, 13 per cent., $9.50, and dissolved bone, $9.50. Ammoniated fertilizers, 2 per cent., are firm at $18.50 to $19.00, and ammoniated fertilizers, 2½ per cent., $19.50 to $20.00. Charleston manufacturers are moving with caution, and are not carrying large stocks, while they place all their output readily at current prices. Dried blood, tankage and other ammoniating materials are still very scarce and advancing.

Phosphate and Fertilizer Notes.

THE steamship Gardapee was cleared from Fernandina, Fla., on the 21st inst. with 2258 tons of phosphate, and the steamship Oaklands with 2160 tons. Steamers loading on the 22d were the Hessle, Dora and Dingwall.

THE officers of the National Peace River Phosphate Co., composed of the following gentlemen—T. V. Carter, president; W. J. Harksheimer, treasurer; J. Clarke, director, and P. W. McMurry, all of Jacksonville, Fla., and J. H. Tatum, of Bartow, Fla.—recently visited their works near Bowling Green, Fla.

A FIRE broke out in the Standard Guano Co.'s factory in Norfolk on the 23d inst. The damage was considerable, but largely by water. The property was all insured.

THE phosphate miners around Ocala, Fla., are making active preparations for a large output of phosphate rock in 1893. Mr. Davis, of Ocala, is interested in making a fine exhibit of Florida phosphate at the World's Fair in Chicago.

THE Gainesville (Texas) Cottonseed-Oil Mill & Gin Co. has filed an amendment of its charter increasing its capital stock to $75,000 from $50,000.

MR. C. THALHEIMER, of the Anglo-Continental (late Ohlendorff's) Guano Works, London, England, has returned to this country to look after the interests of his company, and will establish his permanent office in Ocala, Fla.

THE Merrill-Stevens Engineering Co., of Jacksonville, Fla., is now building a 100-ton drier and a 100-ton washer for the Early Bird Phosphate Co., of Early Bird, Fla.; also a 100-ton drier for the Land Pebble Phosphate Co., of Pebble, near Bartow, Fla. The company has built nineteen driers which are in operation throughout the State.

Atlanta's Superior Commerce.

By Col. I. W. Avery.

The magnitude and importance of Atlanta's commerce has been officially developed in the successful effort made to secure correction of some railway freight discriminations.

The result of the examination has been a surprise to everyone, and has demonstrated the commercial might, present and prospective, of this remarkable city of Atlanta.

Tonnage and revenue on merchandise from Western cities—Cairo, Ill., Cincinnati, Ohio, Columbus, Ohio, East St. Louis, Ill., Evansville, Ind., Memphis and Nashville, Tenn.—eleven months ending March 31, 1892:

To	Tonnage.	Revenues	P. ct. tonnage.	P. ct. tonnage.
Anniston, Ala.	18,213,465	$47,640	2.7	2.4
Athens, Ga.	32,086,270	97,228	4.8	4.9
Augusta, Ga.	129,163,998	402,225	19	20.3
Macon, Ga.	156,247,119	490,153	23	24.7
Total	335,710,852	$1,037,246	49.5	52.3
Atlanta, Ga.	339,177,048	943,874	50.5	47.7
Grand totals	674,887,900	$1,981,120	100	100

Tonnage and revenue from Eastern cities—Boston, Providence, R. I., New York, Philadelphia, Baltimore—year ending April 30, 1892:

To	Tonnage.	Revenues	P. ct. tonnage.	P. ct. tonnage.
Anniston, Ala.	2,974,750	$16,604	1.4	1.2
Athens, Ga.	7,412,241	38,219	3.6	3.4
Birmi'g'm, Ala.	28,828,984	129,427	14.1	11.3
Chat'ga, Tenn.	18,250,842	113,460	8.9	10
Macon, Ga.	29,953,968	118,400	10.1	10.3
Montg'ry, Ala.	18,627,077	158,280	14.5	13.9
.....	.....	112,717	9.1	9.9
Total	106,047,862	$687,107	61.7	60
Atlanta, Ga.	78,520,527	455,753	38.3	40
Grand totals	184,568,389	$1,142,860	100	100

The Beginning of Rice Culture in South Carolina.

The introduction of rice-growing into South Carolina nearly 200 years ago was by something very like an accident. Thomas Landgrave Smith, before coming to this country, had paid some attention to rice culture, and on settling in South Carolina had become impressed with the idea that the climate and low-lying lands of that region were well adapted for rice-growing. In the year 1694 a small vessel from Madagascar put into Charleston harbor in distress. It turned out that there was in the cook's keeping a small quantity of rice, and this fell into the hands of Landgrave Smith, who planted it in a low, moist portion of his garden. The plant grew and ripened in a manner that was most encouraging. Mr. Smith distributed the seed among his neighbors, and eventually rice became the staple product of the colony. At first the rice was cultivated on the high land and on little spots of low ground. The low ground was soon found preferable, and the inland swamps were cleared to extend the culture of the plant. As the fields, in the process of time, became too grassy and stubborn, they were abandoned for new clearings, and so on until at length the superior adoption of the tide-lands and the great facilities for irrigation afforded by their location was discovered. For these the inland plantations were gradually abandoned.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

Use of Cottonseed Hulls as Food for Stock.

[Paper read by Prof. Geo. Payne before the Georgia Agricultural Society.]

It is difficult to imagine anything apparently more dry, tasteless and devoid of nourishment than cottonseed hulls, yet within the last few years they have come to the front as a most valuable cattle food. Chemical analysis shows us that although they appear so uninviting and insipid, they yet contain substance of much value. The producers of cottonseed oil formerly burned their seeds under the engine and sold the ashes; such ashes are rich in potash, containing from 25 to 30 per cent. But as a ton of hulls only yields from 2½ to 3 per cent. of ashes, there will be only from fifty to sixty pounds of such ashes for each ton of hulls burnt; this would only represent from fifteen to eighteen pounds of potash. A ton of hull ashes, if of good quality, can contain 600 pounds of potash, which would be worth about $24.00. But as it takes about thirty-five tons of hulls to produce such a ton of ashes, it is far more profitable to sell the hulls for feed, even at the low price of $3.00 per ton.

Cottonseed hulls contain in every 100 pounds:

	Pounds.
Moisture	7.28
Ash	2.88
Crude fibre	42.83
Fat	1.54
Crude protein	3.75
Non-nitrogenous extractive matter	41.75

In a food analysis such as this the moisture represents the absorbed water in the material, the ash indicates the mineral portion remaining after the substance has been burnt, and the nutritive ingredients are the crude fibre, fat protein and non-nitrogenous extractive matter. The crude fibre is the woody substance or crude cellulose of the food, the fat is the oily matters, the protein is the albuminoids and might be said to correspond in character to the white of an egg, and the non-nitrogenous extractive matter is that portion which is not water, ash, fibre, fat nor protein. It is composed of soluble substances, and consists chiefly of such carbonhydrates as gum, starch, sugar, etc.

While such an analysis shows certain nutritive bodies, it does not necessarily follow that they can be all digested and assimulated. In fact, it has been found by actual experiment that the actual digestibility of the constituents of the various feeding stuffs are not the same, but are nearest alike in those materials which most closely resemble each other. It has also been ascertained that to secure the best results in cattle feeding, the amount of digestible protein present must be always accompained by a certain proportion of digestible non-nitrogenous matter consisting of crude, fibre, fat and extractive. This is called the nutritive ratio. The crude protein is the nitrogenous portion of the food, and is the most costly. Its chief work is the production of flesh and muscle. The crude fibre, fat and non-nitrogenous extractive matter furnish heat and fat, and in adding their total digestibility together that of the fat is first multiplied by two and a-half to put it upon an equal basis with the others, as its fat and heat producing powers are that much greater.

The nutritive ration varies for different animals and for different conditions under which they live. The following are some of the most important ratios:

Milch cows—One part of digestible protein to 5.4 parts digestible non-nitrogenous matter.

Oxen (fattening)—One part of digestible protein to 5.5 up to 6.5 parts digestible non-nitrogenous matter, according to age and weight.

Growing animals—One part of digestible protein to 4.7 up to 8.0 parts digestible non-nitrogenous matter, according to age and weight.

Any decided change from these proportions means waste of food, hence the proper regulation of the different ingredients of a ration is a most important matter.

In discussing cottonseed hulls it is well also to speak of cottonseed meal, as they are the natural concomitants of each other. We have stated above that cottonseed hulls contained 3¾ pounds of crude protein in 100 pounds; 26 per cent. of this (3¾ pounds) is digestible. This gives 98-100 of a pound of digestible protein; this is the unit for the nutritive ratio of cottonseed hulls. The crude fibre in the hulls is 42 83-100 pounds, and 52 per cent. of it is digestible; this will give 22 27-100 pounds of digestible crude fibre. The fat present is 1 54-100 pounds, and 27 per cent. is digestible; this figure to 42-100 of a pound of digestible fat which is to be multiplied by 2½ as described above; this makes it figure up to 1 5-100 pounds. The non-nitrogenous extractive matter in cottonseed hulls is 41¾ pounds; 40 per cent. of this is digestible, which upon multiplication gives 16 7-10 pounds of digestible non-nitrogenous extractive matter. Upon adding together the digestible percentages of crude fibre, fat and non-nitrogenous extractive matter as figured above, the result will be 40 2-100 pounds. As we have only 98-100 of a pound of digestible protein, the nutritive ratio will be as 98-100 is to 40 2-100, or as 1 is to 40 8-10. But as a nutritive ratio of 1 40 8-10 is much too low for feeding purposes, it should be corrected by some far richer food, and we naturally turn to cottonseed meal, which is too expensive and also has too high a nutritive ratio to use alone.

Cottonseed meal in 100 pounds contains 5 18-100 pounds of crude fibre, of which 26 per cent. is digestible. There is 11 74-100 pounds of fat, of which 91 per cent. is digestible. The non-nitrogenous extractive matter amounts to 25 27-100 pounds, and 91 per cent. is digestible. Calculating these percentages and adding them together as in the case of the hulls, gives a total of 51 5-100 pounds of digestible non-nitrogenous matter. The crude protein present in cottonseed meal is 44½ pounds, of which 87 per cent. is digestible; this yields 38 71-100 pounds of digestible protein. Hence the nutritive ratio of cottonseed meal will be as 38 71-100 is to 51 5-100, or as 1 is to 1 3-10. Here we have two materials widely differing in their nutritive ratio, cottonseed hulls being as 1 is to 40 8-10 and cottonseed meal as 1 is to 1 3-10, a very rough food and a very rich one. If one desires to feed an animal for the best results in a given case, whether it is for work, fattening or the furnishing of milk, the nutritive ratio is secured for such an animal under the given conditions. The nutritive ratio for the milch cow, for example, is as 1 is to 5 4-10. By calculation we find that it will take about 100 pounds of hulls and twenty-two pounds of cottonseed meal to produce this ration or in even numbers, and for a food rich enough for most purposes one pound of meal to every five pounds of hulls.

Some animals may not be willing at first to touch the hulls containing this small amount of meal, but they are readily taught to eat them by adding the meal very liberally at first, and then gradually decreasing the amount until the desired proportion is reached, when they continue to eat the mixture with avidity and relish.

The use of cottonseed hulls for fattening cattle and for milch cows has been very extensively practiced for some time in the Mississippi valley, the demand at New Orleans by the dairies alone consuming all produced by the oil mills of that large city.

A gentlemen in this State who is engaged largely in the granite business employs a number of teams of oxen. These animals were always thin until he put them upon cottonseed hulls; now they are sleek and fat, and are fed on hulls alone, with only the addition of a liberal handful of cottonseed meal to each bucketful of hulls. His business furnishes another illustration of value to the farmer, showing how little the farmers' interests are sometimes considered by the railroads. The railway which freights this gentleman's granite to the city charges him $8.00 a carload of 30,000 pounds; when these cars are returned carrying 10,000 pounds of cottonseed hulls the charge is $12.00 a carload.

In actual practice the proportion of five pounds of meal to twenty-five pounds of hulls has been found very satisfactory indeed as a daily ration. The cost of such feeding is quite small. With the meal at $22.00 a ton and the hulls at $3.00, the daily cost of such feeding would be 9¼ cents a day, or $2.77½ a month. Cattle fatten readily under such feeding, which is said to be cheaper than using corn, even at twenty-five cents a bushel. The manure is also considerably richer than that produced under the ordinary system, and hence more valuable.

I would suggest to all farmers who are interested in either the raising or fattening of cattle, or the feeding of milch cows, a fuller study of the wonderful economy and good results of feeding cottonseed hulls.

A New Oil Mill at Denison, Texas.

Last week Messrs. T. R. Chaney, of New York city; T. H. Kane, of Galveston, Texas, and P. J. Manning, of Texarkana, representing the National Cottonseed-Oil Mill Co., completed arrangements for the erection of a fine cottonseed-oil mill at Denison, Texas, after a personal visit to the city and an inspection of its advantages for the location of such an enterprise. Work on the plant will commence at once, and when completed it will represent an investment of about $100,000. An outfit of machinery for a capacity of 100 tons of seed daily will be put in, with all necessary arrangements for increasing to 200 tons daily when needed.

New Cotton-Oil Mill in Temple, Texas.

At Temple, Texas, on the 23d instant, ground was broken on a five-acre plat of land on the Missouri, Kansas & Texas Railway track for the erection of a large cottonseed-oil mill. The plant is to cost $100,000, and the buildings will be of brick with a capacity of 150 tons of seed per day. The firm of Culberson & Scales are the builders, represented at Temple by R. G. Latting.

A syndicate composed mostly of New Orleans capitalists also intends to erect a cottonseed-oil mill at once, the location to be at the junction of the Missouri, Kansas & Texas and Santa Fe Railroads at Temple. The capital stock is to be $200,000, and they will erect a brick house and put in machinery for a mill of 150 tons capacity.

Three Large Cottonseed Mills to be Built.

Mr. W. I. Yopp has purchased a tract of land at Little Rock, Ark., which will be utilized as a site for a cottonseed-oil mill to be built jointly by Messrs. Swift & Co. and Nelson Morris & Co., of Chicago. Contracts have been closed with the Carver Cotton Gin Co., of East Bridgewater, Mass., and the Smith-Vaile Co., of Dayton, Ohio, for the machinery for three oil mills which the Morris and Swift companies propose to erect and have ready for operation by the next season at Little Rock, Ark., Waco, Texas, and Houston, Texas, respectively. Each is to be a six-press mill with the accumulator system having a maximum capacity of 160 tons of seed per day. Mr. H. C. Gardner, of Swift & Co., will purchase the balance of machinery as needed, and George T. Parkhouse has been employed as constructing engineer and will erect the buildings by day labor. It is estimated that the plants when completed will cost from $100,000 to $120,000. Mr. Yopp will establish headquarters at Houston and act as general manager of all the mills.

Cottonseed-Oil Notes.

THE current quotations for cottonseed products at New Orleans on the 25th inst. were as follows: Cottonseed $21.00 per ton of 2000 pounds delivered; cottonseed meal at depot $25.00 per short ton, and for export per long ton f. o. b., $26.50 to $27.00 for current months; oil cake (for export) $26.50 to $27.00 per long ton f. o. b.; crude cottonseed-oil (at wholesale or for shipment), strictly prime, in barrels, fifty-three to fifty-four cents per gallon; refined cottonseed oil, prime, in barrels, per gallon (wholesale or for shipment), sixty cents, and jobbing sixty-five to seventy cents per gallon; cottonseed hulls delivered, per hundred pounds, twenty-five to thirty cents, as to location of mill.

IN western Georgia the excitement continues over the price of cottonseed. The price in Carrollton, Ga., on the 23d was thirty-five cents per bushel, and many farmers were holding seed for forty cents. Buyers who represent cotton mills are very numerous, and all are buying freely. It is thought that seed will go to seventy-five cents or $1.00. There are a number of oil mills going up in western Georgia, and the prices of seed are expected to be much higher next fall. The present price of seed adds nearly two and one-half cents per pound to the price of cotton.

THE Red River Oil Mill at Alexandria, La., is doing an extensive business at present. The shipments of oil from this point in two days last week were valued at $25,000. The mill is running night and day, disposing of eighty tons of cottonseed a day. All the stock of this mill is owned at Rapides, La., except $5000, which is owned at Natchitoches.

COTTONSEED sold in Holly Springs, Miss., on the 23d ult. at forty-two and a-half cents per bushel, with prospects of an advance to forty-five cents the day following. This is the highest price ever paid for cottonseed in Mississippi.

THE Crescent Oil Co., of Memphis, Tenn., will begin the construction of a cottonseed-oil mill at Little Rock, Ark., on April 1 next on ground recently purchased in the northeastern portion of the city. The ground was purchased from J. J. Martin, and it is stated that the Memphis & Little Rock Railroad will put in a switch at once. Mr. Allston Boyd, president of the Crescent Company, and Mr. F. C. Edminston have completed all arrangements for the building of a 100-ton mill. The plant will not cost less than $100,000, and will be equipped with the best and latest improved machinery.

THE Brownwood (Texas) Oil Co., to which a charter was recently granted, has let contract to the Shockoe Machine Works, of Richmond, Va., for a complete mill, including water works, sprinkler outfit and electric-light plant.

THE Shockoe Machine Works (Talbott & Sons, proprietors), of Richmond, Va., has received contract from the McKinney (Texas) Cotton Oil Co. for the erection of a complete plant, including water works, sprinkler outfit and electric-light plant.

MESSRS. STRAND AND VAN WINKLE, of Hillsboro, Texas, and Atlanta, Ga., intend to erect a cottonseed-oil mill at San Marcos, Texas. They have made the citizens a proposition for the erection of a $35,000 plant, which will doubtless be accepted and its conditions met.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 99.]

An Alabama Coal Road.

The building of the railroad connecting the Warrior coal fields with water transportation to the Gulf of Mexico is assured by the closing of the option held by J. W. Woolfolk on the right of way and franchises of the partially built Tuscaloosa Northern Railway. This road is graded for seven miles, and its route penetrates some of the richest coal lands in the Warrior basin. It is to be immediately pushed forward to completion, and when the Montgomery, Tuscaloosa & Memphis Railroad, of which Mr. Woolfolk is president, is finished, this coal road will be part of the system. The road will be about twenty miles long and, in addition to being the connecting link in a rail and water route to the Gulf, will give Tuscaloosa a new route to Birmingham. The Tuscaloosa Coal, Iron & Land Co., which made the deal, intends instituting a line of whaleback barges to run from Tuscaloosa to Mobile and New Orleans in connection with the new road.

A New Trunk Line for Tennessee.

A proposition has been laid before the legislative committee having in charge the locating of the new State penitentiary in Tennessee, which involves the building of a new trunk line railroad through that State and offers a solution of the convict problem which of late years has been a source of much trouble to the authorities. The scheme has been brought forward by Jere Baxter, of Nashville, who has obtained an option on the Crawford coal fields, consisting of 150,000 acres of land in East Tennessee and also on the Nashville & Knoxville Railroad.

He proposes to deed the land to the State upon an adjudicated price, the State to pay for it by passing him over the convicts with which to complete the road from Cookeville to the Cincinnati Southern, and from Lebanon to Nashville. He also proposed to extend and connect with the Tennessee Midland.

The new convict farm as proposed by the idea takes in these coal fields, containing about 150,000 acres of land, on which it is proposed to locate the convicts of the State as they are now worked at the different mines in the other parts of the State. The idea is to take up the committee's view as to the general farm and make a central penitentiary of the place. This, it is held, will do away with the competition with the free labor of the State present under the existing system, and will prevent a recurrence of such disturbances as occurred at Coal Creek.

The Missouri, Kansas & Texas and Queen & Crescent.

A combination for the interchange of business is reported to have been made between the Missouri, Kansas & Texas and the Queen & Crescent system by which they will connect at Shreveport, La. This will give the former an outlet over the Vicksburg, Shreveport & Pacific branch of the Queen & Crescent to New Orleans and the gulf coast on one hand, and Cincinnati and Northern and Eastern points on the other, in exchange for which the Queen & Crescent will have a powerful ally in the West and Northwest. It will be recalled that the Missouri, Kansas & Texas intends building the East Line, or, as it is more properly called, the Sherman, Shreveport & Southern, further south from Jefferson, Texas. The Vicksburg, Shreveport & Pacific owns twenty miles of track extending from Shreveport to the Texas line at Wascom. From Jefferson to Wascom there is about twenty-eight miles for the Missouri, Kansas & Texas to build to make the connection talked of. This system has for some time exhibited an anxiety to secure a tidewater outlet on the Gulf of Mexico, and the reported combination is a likely story.

Savannah, Americus & Montgomery.

The report of the receiver of the Savannah, Americus & Montgomery, covering the operations of the road for the month of December, has been filed with the courts. The gross earnings were $53,663, and expenses $49,014, leaving a balance of $4,649. The figures for the same month of 1891 were gross earnings $43,413, expenses $28,774, net earnings $14,639. The freight traffic shows an increase of over 40 per cent., but the passenger traffic shows a falling off. Judge Speer, of the United States District Court, in the action recently taken by non-resident claimants seeking to transfer the litigation from the Sumter County (Ga.) Superior Court to the United States Circuit Court, has decided that the case is not properly removable. This means that the talked-of change in the road's receivers will not be made.

New Securities of Southern Roads.

The New York Stock Exchange listed the following securities last week:

Austin & Northwestern Railroad—$250,000 first mortgage 5s, guaranteed by the Southern Pacific Co., making the total listed $1,920,000.

Nashville, Chattanooga & St. Louis—$249,000 first consol 5s, making the amount listed $4,696,000. These bonds were issued for extensions.

New Orleans & Northeastern—$100,000 prior lien 6s, making the amount listed $1,220,000. These bonds were issued for improvements.

Louisville, St. Louis & Texas—$1,613,000 first consolidated mortgage 5s.

The proceeds of these bonds were mostly used in retiring prior liens of the company, including the second mortgage of $250,000 and the first mortgage on the Hardinsburg branch of $630,000, also $33,000 car trust certificates. The debt of the Louisville, St. Louis & Texas is now funded into two mortgages, the first for $2,800,000 and the first consols for $1,613,000, the latter covering the whole property and being a first mortgage on the Hardinsburg branch of forty-four miles.

The Burlington to Enter the Southwest

The report that the Rockefeller interests in the Missouri, Kansas & Texas are likely to be bought by the Chicago, Burlington & Quincy receives some credence. The Rockefellers have virtually controlled this road for the past two years, and have invested considerable money in the property. It is now claimed that they are anxious to dispose of their holdings, and the Chicago, Burlington & Quincy is said to be not disinclined to buy. Such an alliance, it appears, would prove mutually advantageous. The Burlington lacks a foothold in that attractive territory, the Southwest, and the Missouri, Kansas & Texas would give this, as well as an outlet through Texas to the Gulf. It desires an entrance into St. Louis, and the Burlington could give such facilities upon probably better terms than any other company. It could also handle its Chicago traffic.

The volume of north and south traffic west of the Mississippi river steadily increases in magnitude, and as the country grows the development of such business goes on. There being nothing to prevent it, the larger share of this traffic must reach the seaboard at Gulf ports, and with this in view and a glance at the country traversed by the Missouri, Kansas & Texas and the Chicago, Burlington & Quincy, the arrangement proposed would seem to prove an unusually profitable one.

Railroad Notes.

An order was filed in the United States Court at Charleston, S. C., on March 1 indefinitely postponing the sale of the Carolina, Knoxville & Western Railroad. The sale was ordered to take place on March 8, 1893, under a suit for foreclosure brought by the National Bank of Augusta. The decree of foreclosure remains in force except as to the date of the sale, which is to be fixed in a future order.

The tax difficulty between the State of North Carolina and the Wilmington & Weldon Railroad Co. has been finally adjusted by the legislature passing a bill ratifying the agreement made between the State and the railroad. By the terms of agreement the State receives three years back taxes on all property of the road, real and personal, and the road surrenders its exemptions from taxation under the charter of 1834, and also its power to make rates for freight and passengers. It is also to pay counties and towns on the main line two years, back taxes and to pay counties and towns on branch lines three years, back taxes.

The property of the Augusta, Gibson & Sandersville Railroad was sold on February 20 at Augusta, Ga., by order of the United States Court. The line is a narrow-gage road extending from Augusta to Sandersville, Ga., a distance of eighty miles. Its capital stock is $123,525 and funded debt outstanding $480,000, a total of $603,525. The property was purchased by James U. Jackson, representing the bondholders, for $250,000. The company will be reorganized, and it is likely that the road will be broad-gaged and extended to some point in Florida.

The stockholders of the Northern Central Railway Co. elected the following officers at their recent meeting: George B. Roberts, president; Frank Thomson, first vice-president; John P. Green, second vice-president; Charles E. Pugh, third vice-president; Stephen W. White, secretary; John S. Leib, treasurer, and S. M. Prevost, general manager. The January statement of the company shows net earnings of $109,476, against $132,936 for January, 1892.

On or about April 1 the first train over the extension of the Missouri, Kansas & Texas to Houston, Texas, will be run, and through trains will be put on between Hannibal, Mo., and Houston.

John McLeod, receiver of the Richmond, Nicholasville, Irvine & Beattyville Railroad, has made an annual report to the United States Circuit Court at Louisville, Ky., in the case of the Central Trust Co., of New York, against the road. The property has been greatly improved, and is now in good shape. The report covers the year ended November 30, 1892, and shows expenditures for the year amounting to $60,200, and a balance on hand above all liabilities of $20,277.

The table of earnings and expenses of the main line of the Cumberland Valley Railroad Co. for 1892 makes the following showing: The gross earnings for 1892 were $845,073.84; for 1891, $863,298.07, a decrease of $18,224.23. The operating expenses in 1892 were $603,612.97; in 1891, $674,189.87, a decrease of $70,576.90. The net earnings for 1892 were, therefore, $241,460.87, and for 1891 $189,108.20, giving an increase for last year of $52,352.67. After paying dividends amounting to $142,228, interest on bonds of $21,640 and other expenditures, bringing the total to $214,119, there is a balance of $27,341.

The monthly report of the South Carolina railroad commission for December and the six months ending December 31, 1892, shows total earnings for thirty-six roads for the month to have been $681,070, a decrease of $19,701 over the same month of 1891. The figures for the six months in comparison with the same period of 1891 show a decrease of $357,212. There were fourteen roads reporting increases aggregating $40,180 for the month, and twenty-four report decreases footing up $59,882. The greatest gains were made by the Georgia, Carolina & Northern and the South Bound. This is largely due to the fact that both of these roads operated completed lines, and the previous year the earnings were from only partially completed lines.

A motion has been made in the Charleston (S. C.) courts to postpone the sale of the South Carolina Railway, fixed for April 11.

J. H. Averill, lately appointed temporary receiver for the Port Royal & Augusta, has been permanently fixed in that position.

Jackson Smith, lately appointed receiver for the Morristown & Cumberland Gap Railroad, reports that the road will be greatly improved and better train service and equipment provided. There is no prospect of extension at present.

Steps have been taken to secure a permanent receiver for the old Chattanooga, Rome & Columbus Railroad Co. W. C. Bunn, of Cedartown, Ga., was made temporary receiver several weeks ago.

The belt railroad at Florence, Ala., was lately sold at a sheriff's sale to Carl Dice, W. J. Nelson and W. H. Kendrick. The line is three and a-half miles long, extending from the Louisville & Nashville depot along the river, passing a number of manufacturing plants, and terminates at the partially completed cotton mill in the eastern part of the city.

The Ohio River Railroad Co. will shortly open for traffic its Huntington & Big Sandy division between Huntington and Kenova, W. Va. This will connect the Ohio River road with the Norfolk & Western.

The Baltimore & Ohio will contract for 2200 freight cars and about 200 excursion cars. The excursion cars will be used for World's Fair traffic, and will be built so as to be convertible into box cars.

The following officers were elected at the recent meeting of stockholders of the Frederick & Pennsylvania Railroad Co.: Charles E. Trail, of Frederick, Md., president; Stephen W. White, of Philadelphia, secretary; John S. Leib, of Baltimore, treasurer. This company owns the road by which the Pennsylvania system reaches Frederick.

The question of a sale of the Cincinnati Southern, which is owned by the city of Cincinnati, is revived. The road extends from Cincinnati, Ohio, to Chattanooga, Tenn., and cost $20,000,000. It is leased to the Queen & Crescent.

The plan for proposed consolidation of the Baltimore & Ohio Southwestern and Ohio & Mississippi, and the control of the latter road by the Baltimore & Ohio, contemplates the issuance of $36,000,000, 100-year 4½ per cent. gold bonds guaranteed by the Baltimore & Ohio; $25,000,000 of these will be applied to the conversion of the existing mortgage of the Ohio & Mississippi, leaving an approximate balance of about $4,500,000 for putting that road into first-class order. The other $11,000,000 are to be set aside as against existing first mortgage bonds of the Baltimore & Ohio Southwestern, already guaranteed by the Baltimore & Ohio.

A decree ordering the sale of the Charleston, Cincinnati & Chicago Railroad has been filed in the United States Court at Charleston, S. C. The sale will take place in that city on May 2, the minimum price fixed being $550,000, bidders to deposit a certified check for $25,000. Receiver Chamberlain is appointed special master to conduct the sale. The property will be sold subject to the rights, title and interest of the Finance Co. of Pennsylvania, and the sale is made in pursuance of the plans for the reorganization of the company.

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BALTIMORE, MARCH 3, 1893.

Notice to Advertisers.

The last forms containing advertisements are closed on Tuesday afternoon. New advertisements or changes should be received not later than Tuesday noon to ensure attention in the issue bearing date of the following Friday. Reading matter should be in our office on Wednesday, although late news can be received early Thursday morning.

WITHIN the past few years American coal has almost entirely replaced the English fuel used on the island of Martinique. The average consumption there amounts to about 5000 tons a month, nearly all of which comes from Philadelphia. The Compagnie General Transatlantique takes about 4000 tons, and the balance is used by the sugar factories. The price delivered is $5.00 per ton, against $5.38 for English coal. There should be an opening here for Southern coal exporters.

SOME time ago we referred to the experiments being made at the Jefferson Steel Works, in Birmingham, by officers of the Tennessee Coal, Iron & Railroad Co., with a view of determining whether or not steel could be profitably made from Birmingham iron. So far the experiments have been successful in proving that a good quality of soft steel could be produced, but the economic side has not been determined so conclusively. It is now proposed to carry on further trials at the steel works erected at Fort Payne, and from the results of these some definite conclusions will be arrived at. It is understood that so far the experiments have been mainly with the process suggested by Mr. Talbot, superintendent of the steel works in Chattanooga, and that at Fort Payne other processes will be tried.

Need of Co-operation in the World's Fair Work.

Through the generous action of its legislature Louisiana will have a display at the World's Fair which will probably not be excelled by any State in the Union. The energetic efforts of the various committees and the hearty co-operation of the people and press of the State form an instructive object lesson for some of our other States which have depended largely upon the individual efforts of public-spirited citizens, and in many cases have failed to give them encouragement, much less assistance. After the fair is opened it will be too late to improve on what has been done, and more than one State will find itself represented in a manner not equal to its resources or desires.

Those who are giving their time and labor to this work deserve help from everyone. Their work is in large measure entirely disinterested, and prompted by no other motive than the wish to have their State appear as well or better than any other. It should be remembered that upon the completeness and excellence of its exhibit will depend in large measure the share of good results in investment of capital and immigration which it is expected will come to the South from the display at the World's Fair, and as these results are what each State is hoping for, the extent to which they will be realized will depend entirely upon the State's exertions. Since the legislatures of all States have not been so generous as that of Louisiana, it should be a matter of personal pride on the part of every citizen to contribute liberally to the fund required to carry out the work in their State, and it is to be hoped that they may realize this now and not wait until it is too late. The benefits which the South can derive from the World's Fair cannot be overestimated, and its exhibits, besides being a matter of pride to its people, should be regarded as an investment which will yield ample returns for all the money and labor expended.

Water Transportation of Alabama Coal to Tidewater.

The recent purchase by the Montgomery, Tuscaloosa & Memphis Railway Co. of the charter, roadbed and franchises of the Tuscaloosa Northern Railway and Tuscaloosa Belt Railway, and in addition a large tract of coal land and some river property near Tuscaloosa, Ala., is one of the most important transactions which has been made in Alabama.

The Tuscaloosa Northern is projected a distance of about twenty miles through the celebrated Warrior coal fields, and the route is said to penetrate some of the richest lands in that coal basin. The line is partially built, and by the terms of the sale is to be completed without delay, thus giving the Warrior coal fields access to the deep water of the Warrior river and by it to Mobile.

The importance of this is twofold. It will reduce the freight on coal to tidewater and enable Mobile to greatly enlarge its export trade; further, it may effect the solution of the problem of Texas using its extensive and rich Bessemer ores to produce pig iron and steel. Both of these depend upon the delivery of cheap coal at tidewater. Export coal shipments from Mobile are gradually increasing in extent, even with the long railroad haul from the coal fields, but with the far cheaper cost of transportation by water almost from the mines to the final port this trade cannot but be enormously increased.

The production of iron and steel in Texas is dependent only upon a sufficient and cheap supply of fuel. At present Alabama coal is delivered at Galveston and Velasco for about $3.75 per ton, and coke could not probably be secured there for less than $5.00, but with through water transportation from the mines or coke ovens to these harbors the cost could unquestionably be brought sufficiently low to justify the erection of a furnace. As to ores, in the Llano district there are deposits of such extent and excellence that no misgivings can exist as to an abundant supply of the best quality. Fuel is the only factor necessary, and there is every reason to believe that this will now be secured.

Use of the Titaniferous Ores of North Carolina.

A paper on "Titaniferous Ores in the Blast Furnace," by A. J. Rossi, read before the American Institute of Mining Engineers at the recent Montreal meeting, gives the results of a series of experiments which are of particular interest to the South just now that steel-making is absorbing the attention of ironmasters.

In western North Carolina there are extensive deposits of magnetic ores practically free from phosphorus, sulphur and titanium, but in the majority of cases the average iron contents is too low to allow the ore to stand the transportation charges to furnaces unless concentrated, and with the exception of the very crude plant now operating in connection with Cranberry furnace, this process has not been attempted. Besides these ores, however, there are even larger deposits sufficiently low in phosphorus and sulphur to come well within the Bessemer limit, but they contain titanium in varying amounts, sometimes only a trace and in other cases as high as 7 or 8 per cent. With the exception of small amounts taken out for local charcoal furnaces or forges many years ago, these have remained practically untouched, as the effects of the titanium were feared by the furnacemen, and consequently there was no inducement to develop them.

The experiments made by Mr. Rossi are all of interest and value, but that which will attract the attention of the practical iron man is the trial of smelting an ore containing from 18 to 20 per cent. titanium in a small furnace nine feet in height, 28-inch bosh and 12-inch hearth. The results of this and also of trials in regular practice elsewhere appear to show that to remove titanium and prevent its accumulation in the furnace as the infusible nitro-cyanide is only a question of sufficient cinder, and consequently of greater fuel consumption—that is, greater in a corresponding ratio with the increase of titanium in the ore used. With the small amounts occurring in the North Carolina ores there should not be any material increase in fuel consumption over the amount now used in smelting the relatively leaner brown ores of Virginia or brown and red hematites of east Tennessee, and there is no apparent reason why furnaces in these districts cannot secure from the as yet undeveloped ore fields of North Carolina a considerable portion of their stock. Such mixture with the ores now used would add many desirable qualities to either foundry or mill irons, and would prove a strong factor in persuading capitalists to erect and operate a steel-making plant.

Perpetual Motion Infatuation.

The idea of perpetual motion applied to the affairs of every-day life is so fascinating that it will always have believers and be the subject of experiment and invention. Of late a new form of machine has been invented by a former resident of Newark, N. J., now living in a small town in Georgia. The machine is described as a "lever motor," having a continuous rotary action, which, when started by throwing the lever forward, keeps on perpetually, and can be applied to running the heaviest machinery. The inventor has applied for a patent, and upon its receipt hopes to manufacture the machine on a large scale and completely revolutionize railroading, navigation and all other branches of business using power. It is to be feared that he will be disappointed. Like the long-sought-for "philosopher's stone" and the "fountain of youth," perpetual motion will ever remain one of nature's secrets beyond the power of human mind to solve.

There are few subjects which have furnished better material for schemers, and the ingenuity shown in some cases where machines have been exhibited, which apparently had overcome all natural laws, deserve a better use. Electricity derived from one source or another has frequently formed the motive power, and so skillfully has it been hidden that in more than one instance moneyed men have been deceived into investing, sometimes large sums, in an invention which was utterly worthless. An interesting illustration of this was shown in a certain New England city a few years ago, where a stranger, some bankers and an electrical expert played in turn the parts of hero and villain.

The matter opened by a stranger visiting one of the bankers and telling him a long story of how he had studied the subject of electricity, and, after wondering that it had occurred to nobody that a motor, if properly wound, could give the power to drive the dynamo from which its current was derived, he had set to work on it and had actually succeeded in making a small model of a "dyna-motor," as he called it, which generated its own electricity, and had sufficient power to turn itself and a a small amount over, which could be increased by a slight change in the system of winding. The story was well worked out, and so excited the interest of the banker that he made an appointment for the following day with the inventor, when the model was to be brought in and exhibited before a number of people. That same day the banker visited an electrician and told him the story, but the latter scouted the idea of such a thing being possible; so when the time came for the model to be shown the financier felt that there was an excellent probability that he had made a fool of himself for the benefit of the friends he had invited. However, the inventor came with his model, which proved to be a small dynamo, probably three inches in diameter, mounted on a plain walnut board

about an inch in thickness. It was set on the table before the assembled party and the inventor spun the armature around, to create a current he said, and then closed the circuit with a tiny switch. Almost immediately the armature stopped and began to turn rapidly in the other direction. This was repeated many times, and for over an hour the party experimented, and finally, so convinced were they that it was a grand achievement, that a company was organized to control the invention, which had not been patented, because, the inventor said, if he had done so some one would have stolen the idea. The inventor was given some money to enable him to construct a larger machine, and the party broke up firmly convinced that within a very short time they would be wallowing in wealth.

The banker shortly afterward visited the electrician, and after calling him a back number, old fogy and similar names, related the actual demonstration of perpetual motion which he had seen. The electrician tried to persuade him that there was something wrong, but he wasn't open to argument, because he had seen the thing, and believed his eyes. Finally, however, he consented to have another trial of the model at which the electrical man should be present, his profession to remain unknown to the inventor. The trial was held, and after carefully watching the inventor the electrical man began to ask questions, then to handle the model. This didn't please its owner and he protested, and this he did more loudly and with a perceptible whitening of the face when the electrician picked up the machine and commenced tapping on the bottom of the board. Still louder were his expostulations when the electrician began to unscrew the model from the base. He said he was being robbed; the capitalists wanted to steal the idea he had worked on all these years; he would sue them and do several hundred things more. In his excitement he endeavored to take the model from the hands of the gentleman who was investigating it, and being prevented from doing this, he watched with blue lips the electrician separate the motor from the base board and finally break the latter, disclosing four tiny dry cells ingeniously connected with the motor by means of the screws used in fastening it to its base. The scheme had exploded. The inventor disappeared, and the capitalists were only desirous of keeping the whole matter quiet.

A. B. HOWARD, JR., chief of the bureau of industrial statistics of Maryland, has issued a bulletin on taxation and assessment which is of great interest and value, particularly in view of the efforts now being made in Maryland to adjust taxation. Mr. Howard's figures comparing these returns with those from other States are also interesting, and his conclusions, while put in the shape of an introduction, are very forcible and to the point.

A NUMBER of persons interested in Florida being represented at the World's Fair have organized a World's Fair commission, electing Arthur C. Jackson, president; Governor H. L. Mitchell, ex-Governor E. P. Fleming, Comptroller W. D. Bloxham, J. B. Browne, Dr. J. L. Gaskins and Joseph Hirst, vice-presidents; G. I. Metcalf, of Juno, secretary, and J. T. Talbott, treasurer. The commissioners from the different counties will be appointed shortly.

Appropriations by the Fifty-Second Congress.

[From our own Correspondent.]

WASHINGTON, D. C., March 2.

The Fifty-second Congress is now in the throes of dissolution, which must occur by statutory limitation on Saturday at noon. Beyond the passage of the regular appropriation bills, but little legislation of moment, either of a general or local character, has been enacted, particularly at the short session now ending. The national quarantine law, however, and several bridge bills, together with the car-coupler bill, are of considerable importance to Southern interests.

The appropriations of this last session for the coming fiscal year, ending June 30, 1894, will aggregate something between $520,000,000 and $530,000,000, according to certain contingencies that may arise between now and the closing hour, as against $507,600,188.71 for the first session of this Congress, and $525,018,672.55 for the corresponding short session of the preceding Congress. The Senate committee yesterday added an amendment to the Indian appropriation bill providing for the opening of the Cherokee Strip, in Indian Territory, to settlement, and appropriating $8,000,000 for payment to the Indians therefor. If this and certain other sums that have been added to the appropriation bills since their original preparation are retained in the bills as finally passed, the total will in all probability reach $530,000,000.

No river and harbor bill was passed at this session, but appropriations for those works for which contracts had been authorized heretofore are carried on the sundry civil bill. Appropriations of benefit to the South have been granted as follows:

RIVER AND HARBOR IMPROVEMENTS.

Improvement of harbor at Charleston, S. C., including Sullivan island and Mount Pleasant shore, $750,000.

Improvement of harbor at Savannah, Ga., $1,000,000.

Improvement of harbor at Mobile, Ala., $500,000.

Improvement of harbor at Galveston, Texas, $1,000,000.

Improvement of Great Kanawha river, W. Va., $500,000.

Improvement of St. John's river, Fla., removal of bar at mouth, $284,500.

Improvement of Mississippi river, under the supervision of the Mississippi River Commission, from the head of the passes to the mouth of the Ohio, $2,665,000.

LIGHTHOUSES, ETC.

Under the lighthouse establishment, for repairs of lighthouses, ordinary, $425,000.

For repairs, special and extraordinary, $100,000.

For salaries of keepers of lighthouses, $670,000.

For expenses of buoyage, $370,000.

For lighting of rivers, including Elk river, Md., Cape Fear river, N. C., Savannah river, Ga., St. John's river, Fla., Chicott Pass and Grand lake, La., Red river, La., Mississippi river, Tennessee river and Great Kanawha river, W. Va., $300,000.

For Cedar Point, Md., light and fog signal at mouth of Patuxent river, $25,000.

For St. Catharine's sound light station, Ga., establishment, $20,000.

For Solomon's Lump, Va., lighthouse, re-establishment in Chesapeake bay, $30,000.

For Wolf Trap, Va., lighhouse, re-establishment in Chesapeake bay, $70,000.

For Key West light station, Fla., increasing height of tower, $1500.

For Brazos river light station, Texas, lighthouse, fog signal and range light, establishment, $50,000.

LIFE-SAVING SERVICE, ETC.

For entire life-saving service, $1,088,047.

For superintendent on coasts of Delaware, Maryland and Virginia, $1500.

For superintendent on coasts of Virginia and North Carolina, $1800.

For superintendent on coasts of South Carolina, Georgia and Florida, $1500.

For superintendent on coast of Gulf of Mexico, $1500.

QUARANTINE SERVICE.

For pay of officers and employes at the various quarantine stations, including those at Delaware Breakwater, Cape Charles, Va., Sapelo Sound, Ga., Key West, Fla., Chandeleur island, Miss., $50,000.

For purchase of site for new quarantine station in Chesapeake bay, $7000.

For Marine Hospital at Wilmington, N. C., repairs, $2000.

For prevention of epidemics of cholera, yellow fever or small pox, the unexpended balances of past appropriations and the additional sum of $900,000, to be expended under the direction of the President of the United States.

MISCELLANEOUS APPROPRIATIONS.

For the revenue cutter service, $925,000.

For the Chickamauga and Chattanooga National Park, to complete establishment, construct roads and buildings, erect tablets and purchase additional land, etc., $100,000.

For survey and preservation of battle lines and procurement of sites for tablets on Antietam battlefield, Md., $15,000.

For artillery school at Fort Monroe, Va., $5000.

For erection of wharf at Wakefield, Va., to enable vessels to land visitors at Washington's birthplace, $11,136.

For preparing index to Confederate records in the War Department, $14,600.

For public building at Clarksville, Tenn., completion, $25,000.

For Baltimore sub-treasury, clerical force, etc., $22,800.

For New Orleans mint $138,950.

For Charlotte, N. C., assay office, $4750.

For surveyor-general of Florida, office, $3000.

For surveyor-general of Louisiana, office, $7800.

Under coast and geodetic survey for primary triangulation from the vicinity of Montgomery towards Mobile, Ala., and for triangulation, topography and hydrography of unfinished portions of the Gulf coast, including Lakes Pontchartrain and Maurepas and the resurvey of Pensacola bay, $8400.

For off-shore soundings along the Atlantic coast, and for current and temperature observations in the Gulf Stream, etc., $6400.

Under the United States fish commission, for custodian of station at Battery island, Md., and custodian at Bryan's Point, Md., $360 each, and for superintendent and four assistants at the station at Wytheville, Va., $3600.

For international naval rendezvous at Hampton Roads, Va., and review at New York, $300,000.

For necessary and special mail facilities on trunk lines from Springfield, Mass., to Atlanta and New Orleans, $196,614.

For support of the Naval Academy at Annapolis, Md., maintenance, repairs, salaries, etc., $196,265.

For clerical force at Norfolk navy-yard, Virginia, $28,226.

For extension of quay and water system at Norfolk navy-yard, Virginia, $23,000.

For clerical force at Pensacola navy-yard, Florida, $3,947.

For clerical force at New Orleans sub-treasury, $18,000.

For dry-dock at Port Royal, S. C., $14,600.

THE NATIONAL QUARANTINE LAW.

The act granting additional quarantine powers and imposing additional duties upon the marine hospital service, passed in obedience to an overwhelming public sentiment in behalf of extraordinary precautions against a cholera invasion this year, was approved by the President on February 15 last. It provides that all vessels at foreign ports clearing for ports in the United States shall first obtain from the consular and medical officers of the United States clean bills of health, on penalty of seizure and prosecution as in cases of violation of the revenue laws. The supervising surgeon-general of the Marine Hospital service, under direction of the Secretary of the Treasury, is required to formulate a uniform code of quarantine regulations for all home ports and places, and in the event that local or municipal regulations prove insufficient, to take such additional measures as are necessary to prevent the introduction of the infection. The chief of the Marine Hospital service is also required to obtain information of the sanitary condition of all foreign ports from which contagious diseases may be imported, and to disseminate weekly reports and bulletins among customs and health officers. Regulations are to be prepared and issued to our consular and medical officers abroad as necessity requires, touching the examination of departing vessels and concerning such other measures as may be needed for the inspection of vessels on this side. Infected vessels arriving at any United States port which is not provided with proper facilities for treatment may be remanded at their own expense to the nearest established quarantine station, where, after due treatment, they shall be permitted to enter port. At ports where sufficient quarantine provision has been made by State or local authorities, vessels bound thereto may be quarantined first-hand. Most important provision of all, the President is empowered to suspend, for such periods as he may designate, all immigration from any foreign country from which there may be imminent danger of the introduction of cholera or other infectious disease, despite the precautions otherwise taken. The old National Board of Health is abolished, and all local quarantine plants and apparatus that may be surrendered to the United States and used shall be paid for by the Secretary of the Treasury.

RAILROAD BRIDGES AUTHORIZED.

Bills were enacted:

Authorizing the Alabama Grand Trunk Railroad Co. to construct, subject to regulations to be prescribed by the Secretary of War, bridges over the Tallapoosa river near Hatchett Ferry and the Coosa river between Cedar Bluff and Tripp Ferry, Ala. Time, one year for commencement of construction and three years for completion, from December 28, 1892.

Authorizing the Fairmount Valley Railroad Co. to construct a bridge over the Hiawassee river between its mouth and Charleston, Tenn., a bridge over the Tennessee river at a point within fifteen miles of its junction with the Clinch river, and a bridge over the Clinch river at a point within fifteen miles of its junction with the Emory river. Time, one year for commencement, three for completion, from January 26 last.

Authorizing the Southern Bridge & Railway Co. of Louisiana to construct, for the use and connections of the railroads on either side of the river, a bridge over the Mississippi within five miles of the upper city limits of New Orleans, at a location to be approved by the Secretary of War. The bridge must be made with three unbroken and continuous spans. The length of the main channel span shall be at least 1000 feet, measured between the piers at the surface of the water at low water. The company will be required to post in a conspicuous place on or near the bridge the clear headroom under the channel span on each day, in figures not less than two feet high, to be readily visible from any point in the channel for a stretch of 3000 feet above and 1000 feet below the bridge. Lights and signals must be displayed as directed by the lighthouse board. The owners of the bridge must construct and maintain at their own expense suitable abutments, dikes and piers for the guidance of water craft through the passageways, and such additional structures as may be needed from time to time. Time, two years for commencement and five for completion, from January 26 last. This will be the largest cantilever bridge in America, and, as projected, will cost something like $5,000,000.

Authorizing the Chesapeake & Ohio Railway Co. to renew, with the least possible obstruction to navigation, its railroad bridge across the Big Sandy river near the present site upon plans to be approved by the Secretary of War.

Authorizing the Florida Central & Peninsular Railroad Co. and the Florida Northern Railroad Co. to construct a bridge across the St. Mary's river between the States of Georgia and Florida on the line of their road from Hart's Road, Fla., to Savannah, Ga. Time, one year for commencement and three for completion, from February 14 last.

Authorizing the Velasco & Surfside Railway Co. to construct a bridge with a draw across the Galveston & Brazos Canal, in Brazos county, Texas. Time, one year for commencement and three for completion, from February 14 last.

Authorizing the Montgomery, Tuscaloosa & Memphis Railway Co. to construct a bridge across the Warrior river at a point

in Tuscaloosa county, Ala., and a bridge across the Cahaba river at a point in Bibb county, Ala., for the accommodation and connection of railroads on either side. The Warrior bridge shall be provided with one or more draw openings, each having not less than 100 feet channel-way at low water, and in addition one or more fixed channel-spans, each having not less than 100 feet channel-way, and every part of the superstructure shall give a clear headroom of not less than ten feet above extreme high-water mark. The Cahaba bridge shall be provided also with one or more openings, each having not less than 100 feet clear channel-way at low water, and in addition one or more fixed channel-spans, if required by the Secretary of War, each having not less than fifty feet channel-way, and every part of the superstructure shall give a clear headroom of not less than six feet above extreme high-water mark. Time, one year for commencement and three for completion, from February 9 and 11, respectively.

Authorizing the Chicago, Mobile & Gulf Ports Railroad Co. to construct a bridge across the Mobile river at a point near Mt. Vernon Landing, Ala., for the connection of railroads on both sides. The bridge shall be provided with one or more draw openings, each one having not less that 100 feet of clear way at low water, and in addition one or more fixed channel-spans, each having not less that 100 feet of clear water channel-way, and every part of the superstructure shall give a clear head-room of not less than ten feet above extreme high-water mark. Time, one year for commencement and three for completion from February 7 last.

Extending the time for the commencement of construction of the bridge across the Red river, near Alexandria, La., by the Rapides Bridge Co., one year from January 9 last.

Extending the time for the commencement of construction of the bridge across Cane river, La., by the Natchitoches Cane River Bridge Co., one year from January 9 last.

Amending an act of August 6, 1888, which authorized the Alabama Great Northwestern Railway Co. to construct a bridge across the Alabama river so as to confirm and extend the right therein granted to its successor, the Montgomery, Tuscaloosa & Memphis Railway Co., and lengthening the time for the commencement of construction three years from February 7 last.

Amending the act of March 2, 1891, which authorized the Little Rock Bridge & Terminal Railroad Co. to construct a bridge across the Arkansas river at Little Rock, Ark., so as to limit the time for commencement of construction to January 1, 1894, and for completion to January 1, 1896.

OTHER RAILROAD LEGISLATION.

The Gainesville, Oklahoma & Gulf Railway Co., of Texas, is empowered by special act to locate, construct and operate a railway, telegraph and telephone line through the Indian Territory from a point on Red river, in the northwestern part of Cooke county, Texas, through the Indian Territory and Oklahoma to a point on the southern boundary of Kansas. Right of way 100 feet wide is granted through the Indian Territory, and a strip of land 200 feet wide and 3000 feet long in addition is given for stations once in every ten miles of railroad, no portion of which shall be sold or leased by the company. Full compensation shall be made to the owners and occupants of property taken or damaged. The company is prohibited from charging the inhabitants of the Territory greater freight rates than are authorized by the laws of Texas, and passenger rates shall not exceed three cents per mile. The company is required to pay to the Secretary of the Interior, for the benefit of the Indian tribes through whose lands the road may run, $50 per mile of railway in addition to the compensation for property taken or damaged, and the payments are to be made in instalments of $500 as each ten miles of road is graded. The company is also required to pay, so long as the Territory is owned by the Indians, the sum of $15 per annum for each mile of railway constructed. The United States Circuit and District courts for the northern district of Texas, the western district of Arkansas and the district of Kansas shall have concurrent jurisdiction over all controversies arising between the company and the Indian tribes. One hundred miles of the railway must be built in the Territory within three years from February 20 last.

MINOR MATTERS.

Acts were passed making Punta Gorda, De Sota county, Fla., and Aransas (Rockport), Texas, in the Corpus Christi customs collection district, sub-ports of entry.

An act was passed increasing to $12.00 the pension of every pensioner now on the rolls at $8.00 per month on account of services in the Mexican war, who is wholly disabled for manual labor and in such destitute circumstances that $8.00 is insufficient to provide him with the necessaries of life.

An act was passed relieving the Citadel Academy of South Carolina at Charleston from all money responsibility for the ordnance and ordnance stores issued to it under its bond of May 8, 1891, and destroyed by fire on March 14, 1892.

An act was passed amending the act of February 9, 1891, "to promote the construction of a safe deep-water harbor on the coast of Texas," by extending the time for the commencement of the work off Padre island two years from February 9 last.

MEASURES THAT FAILED.

The bill known as the anti-option bill, to prohibit the dealings in options and futures, which passed the House last session and the Senate this session after protracted debate in amended form, was killed in the House on Wednesday on a vote taken under suspension of the rules on the acceptance of the Senate amendments. Under such suspension a two-thirds vote is required for the passage of a bill. The measure received only 172 affirmative votes, as against 123 negative, and accordingly, lacking the necessary two-thirds, it failed.

The Nicaragua Maritime Canal bill, reported from the Senate committee on foreign relations by Senator Sherman, together with the amendments offered respectively by Senators Higgins, of Delaware; Quay, of Pennsylvania; Felton, of California; Stewart, of Nevada, and Pfeffer, of Kansas, remains hanging up on the Senate calendar unacted on.

The bill to grant terminal facilities in the city of Washington to the Norfolk & Western Railroad passed the House and has been reported, with amendments, to the Senate, but is still on the calendar there.

There is little prospect that the Hawaiian annexation treaty bill will be finally acted upon before the adjournment of this Congress.

The proposed silver legislation and the bill to adjust the claims of Arkansas and other Southern States under the swamp land grants were decisively voted down.

MISS IDA HEWITT, of West Virginia, who is well known in railroad circles as the only female locomotive engineer in the country, has agreed to run the first train over the grounds of the World's Fair on opening day. Miss Hewitt is now running on the Cairo & Little Kanawha Road, owned in large part by her father, which is a feeder to the Baltimore & Ohio system from the lumber districts of West Virginia.

Is There Tannic Acid in Cactus?

In reply to a communication from a reader of the MANUFACTURERS' RECORD, who inquired about tannic acid in the cactus plant, we have the following letter from Mr. C. B. Warrand, of Savannah, Ga., who recently contributed to these columns an interesting article on "Palmetto for Tanning Purposes":

SAVANNAH, GA., February 27.

Editor Manufacturers' Record:

In answer to your favor of the 25th inst., inquiring if the cactus of south Texas and Mexico has tanning properties, I beg to state that I have never seen the plant and can only give you two tests, which anybody with common intelligence can follow and form some idea, if it is worth the pains to go into further investigations and expenses. The tests of even the best chemists for tannic acid are not always reliable, as the formation is not stable, and is easily disintegrated.

Test I. Bruise the cactus in a wooden or china mortar with a pestle of the same material; avoid all contact with iron; place the bruised material in about eight or ten times its volume of rain water; boil in a copper, tin or earthenware vessel for an hour or two; strain the liquid off; take a small quantity in a glass and add a solution of copperas (sulphate of iron) a few drops at a time until the liquid is black; let it stand undisturbed for twenty-four hours. The sediment, which will be inky black, is tannate of iron, and some idea can be formed of the quantity of tannate contained in the plant.

Test II. Bruise the material as in Test I and place the material with water in a cast-iron vessel and boil for an hour or two; strain and press the solid parts out and put the liquid part back into the cast-iron pot; continue the boiling until it is of the consistency of thin syrup. Care should be taken to scrape with a table knife around the level of the liquid so as to avoid a deposit on the side of the pot. When it is of the consistency of syrup finish evaporating in a water bath—that is, place the vessel containing syrupy liquid in another containing water. The water in the outside vessel is kept boiling and fresh water added from time to time to replace the evaporated water until a solid extract is obtained; place this solid extract in a crucible or in some iron vessel and heat until it is red hot. The residue will be oxide of iron, which has been taken from the cast-iron vessel by the tannic acid, forming tannate of iron. About an equal weight to the weight of residue attained after heating will represent the tannic acid the plant contained.

Both of these tests will give some idea of the contents of the plant; however, nearly every growing plant contains more or less tannic acid.

In Test I if the precipitate is black, the tannic acid is physiological and adapted to tanning, while if the precipitate is dark green it is pathological tannic acid and of little value for tanning purposes.

C. B. WARRAND.

Busy Times in Rocky Mount.

ROCKY MOUNT, N. C., February 25.

Editor Manufacturers' Record:

Since the first of January, 1893, rapid strides in the development of this place have been made, and such rapid growth has never been known in any town in the Old North State. On Sunday, January 1, the great Atlantic Coast Line opened up its immense shops for building and repairing, and at the same time made this the relay point for the entire system, thereby bringing into the town hundreds of men of all kinds of vocations. By many of our inhabitants the establishment of this great plant was looked upon with a great deal of doubt, but now that it is here, and here to remain, they all look upon Sunday, January 1, as the commencement of an era of great prosperity for what was once the sleepy little village of Rocky Mount. As is naturally to be supposed, the town was in no way prepared in the way of a sufficient number of homes for this large number of families, but with their accustomed promptness and activity our citizens have awakened to the necessity of providing homes for the newcomers, and in the space of six weeks eighty-one new buildings have been commenced and many have already been completed. And still the work goes on, for new contracts are being let every day.

Two smoking-tobacco factories are now in operation here, and they are manufacturing the finest quality of smoking tobacco from the renowned bright leaf of eastern North Carolina. Although commencing in a small way, we prophesy that in the course of a few short years they will be numbered among the large manufacturers of the Union, for they have the finest tobacco that is grown in the world at their very doors, and do not have to go to other markets to purchase it, thereby avoiding a great expense, which will naturally increase the profits on their output.

Our tobacco market, which now holds the enviable position of being rated the fourth largest in the State, is steadily booming ahead, and with the many factories which are coming in every day to establish it more firmly there is little doubt that in a few more years we will have no equal as a bright leaf market. Tobacco is today being shipped from this market to all parts of the world, and is selling for higher prices than any tobacco in the South. Plans are now on foot for an immense stemmery to be located here, which will be in operation by September next, and several large three and four-story prizeries will be constructed within the next few months in order to give sufficient room for the handling of the next crop of tobacco, which bids fair to be much larger in every way than the one now being marketed.

Our land and development companies are in no way remaining idle, for they see prosperity ahead and are doing their share towards the upbuilding of a town which will have no equal in the eastern part of North Carolina. The Rocky Mount Improvement & Manufacturing Co. has already constructed a number of nice homes on its beautifully-situated property, and will soon let contracts for quite a number more, as the company realizes the necessity for homes for the great number of people who are constantly pouring in. Water works and electric lights are also being agitated, but no positive step has been taken in this matter yet. The future of our town is now established, for what the Norfolk & Western Railroad has been to Roanoke, Va., the Atlantic Coast Line will be to Rocky Mount, N. C., and with a concerted action on the part of our citizens there is no reason why we should not soon build a town that will be looked upon with envy by sister towns in this section.

PROGRESS.

THE Jacksonville (Fla.) Industrial Development Co. has purchased a tract of 180 acres of land lying a short distance north of the city for $14,000, payable in the paid-up stock of the company. It is its intention to make a manufacturing suburb of it. One cigar factory employing 300 hands has already been secured, and others are in view. An electric railroad from Jacksonville to the place is proposed so soon as its construction will be justified by the developments.

IT is reported that a new process for manufacturing steel has been discovered by Benjamin Brazelle, of St. Louis. By means of this process soft steel is to be produced for $12.50 per ton. An effort is being made to organize a company with a capital of $1,000,000 to build a large plant in St. Louis and make steel by this process.

COAL AND COKE.

The Benefits of Electricity in Mining Operations.

The special advantages attendant upon the use of electricity in mining operations of all kinds are never more strikingly shown than during the prevalence of weather such as that to which we have been treated since the beginning of this winter. The temperature has fallen so low in certain parts as to render even the "oldest inhabitant"—that unimpeachable authority—incredulous as to the occurrence of a severe winter in any of his previous experience. The snowfalls have been unprecedented in their persistency, the ice has accumulated in thicker strata and greater quantity, and what little sporadic thaws have supervened have caused unexpected havoc.

Reports from the mining districts of the less favored territories show that although mining operations have been beset with great difficulties, yet in all cases in which electricity is the motive-power used for the operation of the mine machinery there has not been an instance of a breakdown, whereas, in former times and under less favorable conditions and methods, breakdowns were a usual occurrence in winter.

Mines operated by steam are subjected to many and various accidents directly traceable to sudden changes in temperature, each one of which is the cause of pecuniary loss to the mine owners and endless trouble and annoyance to the superintendent and his aides. Owners and managers wedded by predilection or necessity to the ideas which the progress in scientific knowledge of the last ten years has relegated to the dusky obsolete, have been compelled to see water pipes burst, pumps choked by ice, boilers disabled, steam pipes damaged, ventilators stopped, stamping and concentrating machinery at rest, and the whole busy, restless life of the mine with its noisy hum under the pall of a depressing winter silence, which lasts until the more genial warmth of spring arrives to assure the manager that he may begin to effect the necessary repairs without fear of future mishap. If the mine is the property of a company, the shareholders grumble at the loss of time and the non-productiveness of the mine, while the directors are at their wit's end to find rational excuses for the satisfaction of the shareholders.

But a compulsory shut-down of this character at the most inclement season of the year has effects which reach farther than the pockets of the shareholders or the minds of the directors. Miners thrown out of work are unable to provide for those dependent on them, and widespread misery is the result. To forestall this, they are compelled by dire necessity to migrate to other points where subsistence for them and their families can be procured. If, however, the mine owners decide to keep their good men on the pay-roll, the expense entailed constitutes another addition to the already considerable loss brought about by the mere shut-down itself and the consequent non-production during the season of inanition. If the miners are simply laid off and migrate the mine owners are always exposed, on the resumption of work, to the danger of having their mine filled with inexperienced workers and to the possibility of accidents with their ensuing loss.

Thus suffering in some shape or another is inflicted upon all concerned once winter firmly grasps with icy hand the mine which is operated solely by water and steam—upon the proprietors or shareholders in their most tender spots, their pockets—upon the miners, their wives and children, the future generation of workers, in their very lives. To these last the playful snowflake and the hoar-frost are realities which few of the shareholders of the ordinary category are able to conceive of, or, if so, to appreciate.

The adaptation of the electrical current to almost all the different methods of mining, and its more general adoption as progressive *fin de siecle* ideas permeate the body social, are effecting a gradual change in mine life which is assuming an aspect so different from what previously prevailed as to astonish those who do not keep well abreast of the swiftly advancing *Zeitgeist*. A stupendous reform is being effected, and the agent thereof is silently but irresistibly doing the work. The humble little wire which runs over porcelain insulators down into the bowels of the mine to the points of application of the power is, to use a celticism, a "fairy godmother." To the mine pervaded by the electrical current come no shut-downs; bursted pipes are unknown; the whirr of the machinery is ceaseless; there are no stifled pumps; the course of mining operation runs its even way without delay or mishap; the throbbing pump at the extreme end of some deep working thrusts the water to the surface with constantly maintained force; the ventilators continue to supply fresh air and draw off the deleterious; the cutter tears out without interruption the slot in the coal ledge; the drill merrily pounds it way into the depths of the mineral; the locomotive performs its allotted task; the cage ascends and descends without intermission, and the stamping mill and the concentrator continue their work uninterruptedly. There is no cessation of labor either of man or machine, except at the proper times. Temperature vagaries are indifferent matters of no particular concern either to miners or owners.

The results of an electrical installation in a mine, whatsoever be its character, are immediate and beneficial. Constant work means assurance for the owners and the men, and their minds free from the worry entailed by the ever-present dread of a possible shut-down; they are able to think of improvements in operation, and even occasionally to consider favorably the pleasing prospect of profits. The physique of the men also improves as the conditions under which they work are ameliorated, and it is incontrovertible that the better the physique the better the class of labor and the greater the material results. With the advent of profits comes the contentment of the shareholders and directors, and this last assured, the circle of benefit is complete.

From all that precedes a moral can be drawn by those who have ears to hear and eyes to see and recognize benefits when thrust within the range of their vision. Adopt electricity in all mines where possible and reap the advantages which will as certainly result as will the sun rise at the break of day.—John McGhie, in the *Black Diamond*.

Coal and Coke Notes.

THE Minerva Colliery Co., of Laredo, Texas, which took charge of the Santo Thomas coal mines several months ago, has increased the output of the mines more than 100 per cent., and is now shipping nearly 300 tons weekly.

A MINING engineer is reported as having said that around Egypt and Sanford, in Moore and Sanford counties, North Carolina, there are extensive deposits of high-grade bituminous coal which could be opened and operated successfully.

THE Jellico (Tenn.) Coal Co. has just completed some improvements at its mines, including a system of electric haulage and revolving screen for sifting coal. An incline railway has been let to contract.

THE exports of coal from the port of Norfolk from January 1, 1893, to February 23, 1893, inclusive, as cleared by William Lamb & Co., agents at Lambert's Point, is as follows: Foreign exports 1818 tons and coastwise 22,141½ tons. Total for week ending 23d instant, 23,959½ tons, and the total amount to February 23 is 200,131½ tons.

The Naval Dry-Dock at Port Royal.

While considerable attention is being bestowed upon the building of dry-docks in the Northern navy-yards, the work of cutting out a big hole in the ground is being steadily carried on at Port Royal, S. C., Civil Engineer Mackay being in charge.

When the battle-ships Indiana and her sisters are in the water there will be no dock large enough to take them, with the exception of that in course of construction at this place. It is what is commonly known as a "timber-dock," which term distinguishes it from the old style of stone dry-dock which was once so popular with the Navy Department, and one of which is to be found in our principal navy-yards.

Port Royal was selected as the site for a navy-yard after a careful inspection of the seaboard south of Norfolk by a board of naval officers composed of Admiral Porter, Vice-Admiral Rowan, Rear-Admiral John Lee Davis, Chief Engineer King and Naval Constructor Easby. The result of their observations was that this is the place best calculated to meet the wants of the government, there being plenty of water for any size ship, and great capabilities for being securely fortified against an enemy's attack.

The dock, which should be finished in the early autumn, is 500 feet in length and about 120 feet in width, the largest on the Atlantic coast and twenty feet wider than any other in the United States. There will be used in its construction over 6000 piles and 2,000,000 feet of lumber. Its pumps will discharge over 75,000 gallons of water a minute and will fill the basin in one hour.

The general features of the finished dock will not be unlike those at the Brooklyn yard, but in the details it differs essentially, and the changes from other wooden docks are such as to secure increased strength, and, it is thought, greater durability. Probably, like all similar docks, the greatest expense in keeping the dock in condition will be that necessitated by the pumping to keep down the water that filters in.—New Orleans *Picayune*.

THE eighteenth annual special issue of the London *Timber Trades' Journal* has been received. Its contents embrace, perhaps, a more extended field in the lumber and timber trade than any issue of a previous publication. Elaborate tables of statistics of the trade in Europe and America are introduced, and form a most minute and careful compilation of facts and figures relating to lumber and timber. The cover is illuminated, and throughout the issue the numerous illustrations form a special feature. A special supplement is also presented in the shape of a map of the whole of the north of Europe timber-producing districts, which may be classed among the highest types of such lithographic work.

THE address delivered by B. Howard Haman, of Baltimore, before the Maryland Convention for Good Roads, held in January, has been published in pamphlet form by the Maryland Road League. Mr. Haman's subject was "Oysters and Good Roads." He advanced the idea that the State, by leasing water lots where natural oysters do not now exist, could obtain sufficient revenue to keep in repair all the public roads and bridges within its borders. The outlay each year for this purpose is $500,000, which is raised by direct taxation. The plan is a practicable one and offers a satisfactory adjustment of the question of road maintenance, as well as tending to promote the widest development of one of the chief industries of the State.

Paducah, Kentucky.

PADUCAH, KY., February 27.

Editor Manufacturers' Record:

A mere glance at the map will show to even a casual observer the natural advantages held by Paducah over other river towns in Kentucky. Situated as she is at the confluence of the Cumberland and Tennessee rivers with the Ohio, she derives all the benefits obtained by water transportation of thousands of miles on the Ohio and Mississippi rivers, 800 miles on the Tennessee and a long distance on the Cumberland, making this naturally a lumber and manufacturing point. Waterways and railways combine to furnish cheap and ready transportation for raw material and manufactured articles. After the lumber business, which ranks first among the important businesses in this thriving city, comes tobacco, last season showing 25,000 hogsheads sold here. The wholesale liquor business is also extensively engaged in. Expressed in figures the business done in Paducah for 1892 is approximately as follows:

Lumber	$2,000,000
Tobacco	1,250,000
Dry goods	1,000,000
Groceries	1,500,000
Whiskey	1,500,000
Hardware and nails	500,000
Furniture manufacturing	250,000
Foundries and iron works	200,000
Total	$8,200,000

Five local banks with combined capital and surplus of $875,000 average about $90,000 daily transactions, making about $27,000,000 per annum. General business has been in past two depressed years, and is now, in good healthy condition. Merchants are hopeful and prospects good. As regards artificial advantages, Paducah is not behind her sister cities, and has a complete system of electric railways, electric lights, water works, beautiful paved streets. Occupying a position above high-water mark, she offers advantages second to none for either a commercial or manufacturing location; population 20,000 and steadily increasing; really an ideal Kentucky town. E. D. JUNKIN.

News from Alexandria.

ALEXANDRIA, IND., February 28.

The Lippincott Glass Works, which have been in operation here for a year or more, will be doubled in capacity, employing 250 additional men and adding $15,000 a month to our pay-roll. The contract between the owners of these works and the citizens for this enlargement has been made.

In a recent letter the views of Postmaster-General Wanamaker regarding the wonderful industrial growth of the Indiana gas district, based on his trip through the section some months ago, were published, and now his views are given additional weight by the announcement that he has been making some heavy investments in property. The *Daily News*, published at Anderson, in this county, says: "Russell Harrison and John Wanamaker are leading a powerful syndicate which is preparing to operate extensively in real estate in the gas belt during the ensuing year. The syndicate now has control of land at Converse, Marion, Fairmont and Alexandria, and one of its pet schemes is to connect the towns where they are interested with an electric railway."

Every day adds to the interest that is being aroused throughout the country in the vast concentration of industrial enterprises at Alexandria. Not only is Alexandria assured of being the greatest glass-making place in the world, as the glass works already here or contracted for will employ largely over 6000 mechanics, but it is also becoming a great centre for other industries. Building operations will be very active just as soon as the weather permits, and by the middle of spring over 1000 dwellings will be under construction or contract, but even this great number will not supply the demand.

MECHANICAL.

The Jeffrey Steel Cable Conveyor.

The accompanying illustrations represent a few of the parts entering into the construction of the Jeffrey steel cable conveyor, manufactured by the Jeffrey Manufacturing Co., of Columbus, Ohio. Fig. A is a steel wire rope to which iron projections of several forms are fastened. Fig. B is an intermediate or transmission clamp that engages in suitable gaps in the rim of

FIG. A.

the transmission wheels, which drives the rope. Fig. C is another form, being also a transmission clamp, having a circular disk extension which does the conveying. These clamps are made in halves and secured firmly to the rope by means of two or more strong machine bolts, and are made in various styles and shapes to best suit the purposes for which they are intended. They are also made very heavy, with toothed projections for log-hauling purposes, and of special designs for elevating purposes.

FIG. B.

To accommodate the different materials to be handled, the troughs in which the rope and clamps move are made in various forms. Fig. E represents one having a semi-circular bottom of steel or iron, rolled in many sizes and gages, which is firmly screwed or bolted to wooden sides. This construction is very durable, simple and economical, and especially desirable where small and abrasive substances are to be handled,

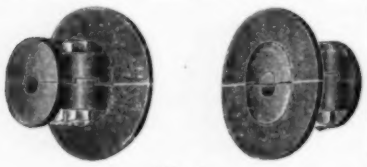


FIG. C.

such as ore, stone, gravel, cement, rock and pebble phosphate, etc. It can also be advantageously applied to conveying coal, tan-bark and similar material.

Fig. F represents another kind of trough, being V-shaped, which is best applied to handling slabs, saw-dust, chips, pulp, wood, and in a modified form for log-hauling purposes.

Chain elevators, conveyors and chain belt power transmission machinery are now made in an almost endless variety of patterns and sizes, and occupy a foremost rank in the line of labor-saving devices, and are too well known to require any detailed description here. Chain, however, owing to its peculiar construction and consequent weight, necessarily limits the height and length at which elevators can be safely and economically operated. The growing demand for long-distance conveying machinery has brought into prominence steel wire rope as a most suitable device. It possesses the essential features, namely, great strength and simplicity of construction at a minimum of weight. These features make possible the construction of conveyors of almost indefinite lengths, varying from 300 to 1500 feet centres, and it is questionable whether the limit has been reached.

Among the many manufacturing establishments where these conveyors are labor-saving appliances may be mentioned paper and pulp mills for carrying the pulp and wood from the river or cars to the wood-room, and the chips from the wood-room to screens and digestors, the refuse to the boiler-room or burned. Where it is necessary to use coal and bring it a long distance from the cars, these conveyors will do excellent service. No saw mills would be complete without one or more of these to haul the logs from the river to the mill, take the lumber to the storage piles, and convey the slabs, saw-dust and other refuse to the pit or burner. At coal mines they serve to distribute the coal into the storage-bins and convey the slack to the most convenient place where it will be out of the way.

A great advantage that cable conveyors possess over chain is that they can be readily driven either from the receiving or delivery end, wherever power can be most conveniently attached. Both cables can be run on the same plane, both being made to do duty, one carrying the material out and the other bringing it in, or they can be made to return one under the other, and describe a number of angles when necessary. There are many other purposes for which they can be used to a great advantage.

This company manufactures, in addition to the cable conveyors, an extensive line of chain conveyors, and also many other labor-saving devices in elevators, conveyors and similar machinery. It has met with such marked success in the application of its different appliances that it has become necessary to increase its already large plant, and with these improved facilities can promptly execute all orders. Branch offices have been established at No. 48 S. Canal street, Chicago, Ill., and No. 163 Washington street, New York city.

Bucyrus Steam Shovel & Dredge Co.

The new works of the Bucyrus Steam Shovel & Dredge Co. at South Milwaukee, Wis., are about ready for occupancy and expect to start up in about a week. This plant will be the finest of its kind in the country, and for its size will be the best to be found anywhere.

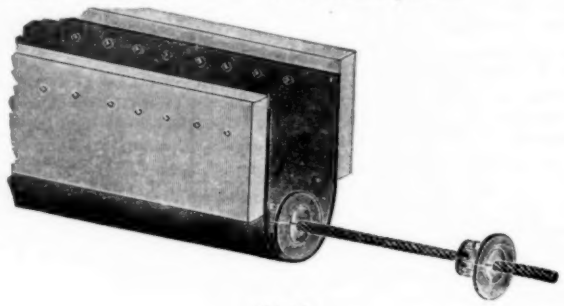


FIG. E.

Owing to the large business done by the company the works at Bucyrus have been decidedly cramped for some time. The change to be made will give ample accommodation. The new location is in every way a most advantageous one for the conduction of a business such as that in which the Bucyrus Steam Shovel & Dredge Co. is engaged, and there will be plenty of room to increase the capacity of the works when this again becomes desirable.

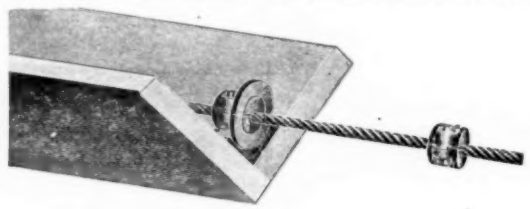


FIG. F.

Regarding business done during the past year the company writes: "We have never been so full of work as at the present time; we have over $200,000 worth of unfilled orders on our books and more coming in constantly. Our bid to the government for a large suction dredge, for use on the Mississippi, Red and Atchafalya rivers, under Capt. John Millis, stationed at New Orleans, has just been accepted by the War Department, and we are commencing to build. The contract price was $69,500, and the dredge will be very complete. Our design was original, and our bid was accepted on its merits, though it so happened that we were the lowest bidders."

Recently completed orders of the Bucyrus Steam Shovel & Dredge Co. comprise a large combination dredge for the Plant Investment Co. at Port Tampa, Fla., which will cost about $80,000, and a large number of other dredges of various types, besides their regular steam-shovel work, which is always large.

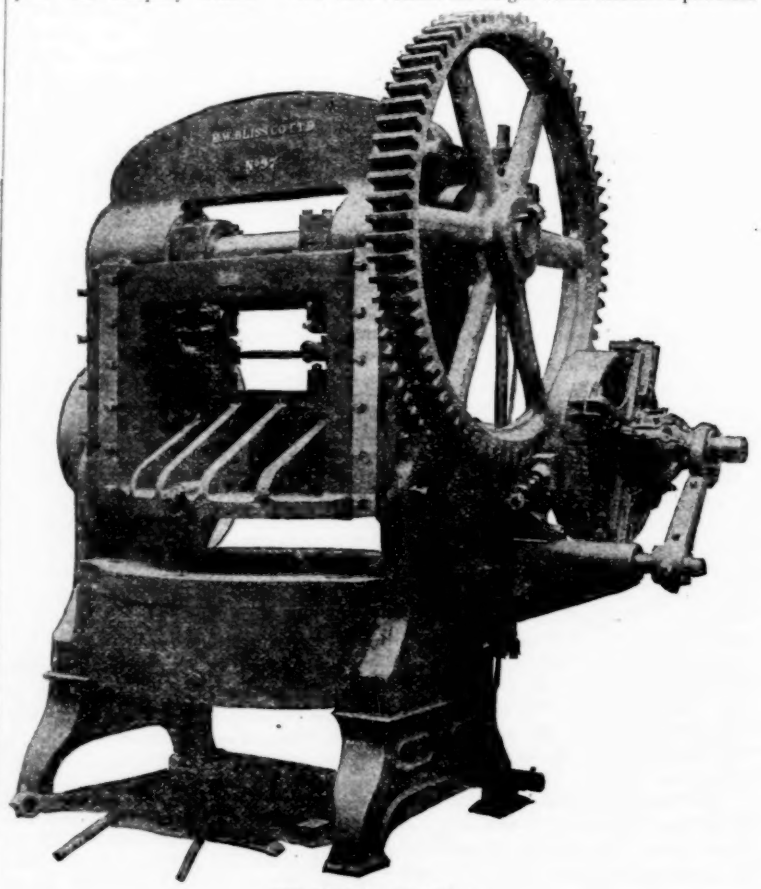
The Bliss No. 97 Press.

The cut illustrated on this page shows the No. 97 press for cutting large armature discs as recently built by the E. W. Bliss Co., 137 Plymouth street, Brooklyn, for the Edison General Electric Co., of Schenectady, N. Y.

The construction of this press embodies a number of special features which have not, we are informed, been used in connection with presses of this class.

In order to give a firm support and accurate guidance to the large and delicate dies, the ordinary centre gib has been abandoned, and the ways of slide are spread apart so as to be as wide as the frame itself. This has also made it possible to lengthen the ways considerably without increasing the height of the frame. The cut shows the additional solidity and accuracy due to this mode of construction.

Another special feature is the application of a new automatic friction clutch which, it is claimed, obviates entirely many of the difficulties said to be experienced with the regular automatic clutches on heavy back-geared presses. Its application and construction will be understood from the cut. A pressure on the foot-treadle shown releases the weight which actuates a powerful friction clutch on the back shaft, thus starting the press almost instantaneously and obviating entirely the heavy metallic blow, and which frequently causes expensive delays and repairs. After the shaft



THE BLISS NO. 97 PRESS.

has made one complete revolution a cam releases the friction clutch, bringing into action at the same time a brake, and thus stopping the slide at the highest point of stroke.

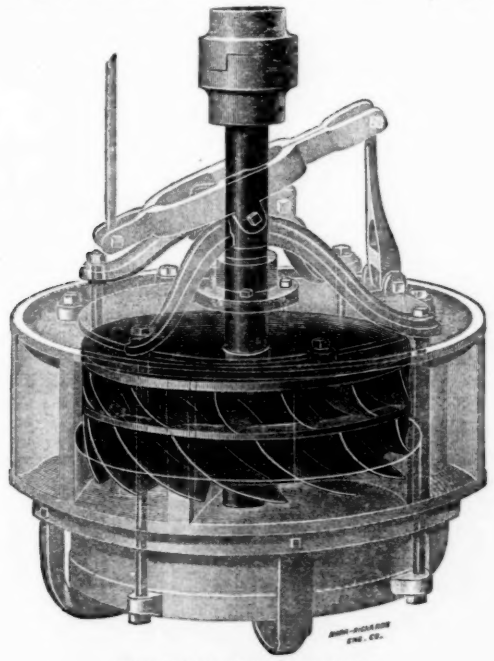
The large gear-wheel instead of revolving continually, is, with these new clutches, keyed on the shaft and at a standstill until the clutch is thrown into action. This is believed to constitute an additional advantage in the saving of considerable wear on the shaft and wheel hub.

There is, it is stated, nothing about these clutches which is liable to get out of order, and for whatever wear that may be occasioned by continuous use easy means of repair are provided.

This press will cut armature discs thirty inches diameter and larger. It has a distance between the housings of fifty-four inches, and is generally made with a thirty-inch round opening in bed, which, however, can be varied to suit special requirements. It is geared one to ten, and has a fly-wheel weighing 1800 pounds on the back shaft. The weight is 30,000 pounds.

The Walsh Double Turbine.

B. H. & J. Sanford, of Sheboygan Falls, Wis., manufacturers of the Walsh improved tight-fitting cylinder gate double



THE WALSH DOUBLE TURBINE.

turbine wheel, have made some further improvements in it which add to its efficiency. As shown in the accompanying illustration, the dark portion shows the wheel proper or runner and the cylinder gate in its down or open position. The gate passes down to open and is the reverse of all other cylinder gates. At half gate the cylinder passes down to the partition ring dividing the two sets of buckets, thus using the upper half of the wheel only, which virtually amounts to a single turbine wheel at full gate giving full percentage, a result not obtained by any other wheel.

At full gate the cylinder passes down to the position as shown in the cut and forms a short draft tube. Another advantage gained by the introduction of this principle in operating the gate is this: Nothing can prevent the gate from closing perfectly tight, as sand or rubbish in the water will be carried through by the current and leave the upper edge of the cylinder clean to go up to the square shoulder turned in the crown plate, thus forming a gate that is free from the danger of clogging and is absolutely water-tight when closed. This is a feature of material importance where the water supply is limited and must be used with the best possible economy. The hoist-gate rigging is an original feature and dispenses with all gearing under water.

The lever which encircles the wheel shaft is attached to the gate spider near the top, where the bearing is formed for the wheel shaft; to the four arms of the spider are attached the parallel rods which pass through Babbitt-lined guides in the case to lugs on the lower end of the cylinder gate, the centre of the spider sliding vertically upon the wheel shaft. This is one of the strongest and best working gate riggings in use, and can be easily adjusted if necessary at any time and will never wear out.

A Testing Machine vs. Yellow Pine.

There's nothing like yellow pine. A beam of it ten inches square by seventeen feet long won a victory over iron, steel and the other materials used in the construction of a big pressure testing machine at St. Louis the other day. Washington University, in the city mentioned, had recently built what purported to be a 1,000,000-pound testing machine in its department of civil engineering. The purpose of such machines is to test the strength of materials that may be put in bridges, trusses, etc. This particular machine was on the hydraulic-press principle, and was operated with oil in the cylinder. When the 10-inch piece of yellow pine was put in to be tested the engineers in attendance knew that the great machine had an antagonist worthy of its best efforts. But they did not anticipate what happened. Up to a pressure of 200,000 pounds there was not a creak or groan from either machine or timber. At 280,000 pounds the pine began to bend just the least bit, and there were two or three sharp raps, as though some one had struck the machine with a hammer. At 300,000 pounds the end came. With a terrible crash the great machine flew into a hundred pieces, and the pine beam resumed its straight lines. It is not known that the timber was of Georgia pine, but it must have been. That is the kind of pine Georgia grows. And if it was indeed the Georgia product, the only way the engineers will ever break it will be by making their testing machine of other Georgia pine. They waste time when they try it with iron or steel.—Savannah *News*.

THE Louisiana Alcohol Co. has been organized in New Orleans for the purpose of perfecting a new process for distilling spirits from sugar refuse. Heretofore this product has been run into the river or burned by the planters, who, regarding it as worthless, were glad to get rid of it in any way. If it can be utilized in the distillation of spirits the revenues of the planters and refiners will be greatly increased.

Savannah as She Is.

By Col. I. W. Avery.

The beauty of Savannah strikes every one that visits it, and it owes that loveliness largely to the original plan of the place fashioned by the founder, General Oglethorpe.

Its wealth of foliage, reposeful seclusion and sylvan flavor and aspect, blended with its commercial convenience and business compactness, attract and charm all sojourners.

Her exquisite squares were originally intended as a soldierly precaution for gathering together in defence against the brutal incursions of the savages that lived around in the native wilds. They have become sweet and unique breathing-places for the myriads of young children, and are the healthful lungs of the delightful city, and are adorned with statues, monuments, fountains and great forest trees, graced by mingled magnolias, japonicas and tropical growths like the catalpa and banana; they are veritable oases of comfort and comeliness.

Savannah has a population of over 62,000. It covers 4000 acres, valued at $40,000,000. It has a commerce of $125,000,000. It has of streets 106 miles; public parks, sixty-five acres; street railway, twenty-five miles, and wharves, those symbols and agencies of trade, five miles.

Savannah is the head of ship navigation on the Savannah river, eighteen miles from the sea, on a plateau fifty feet above the level of the ocean. It is a little over 32° of north latitude, and the Gulf Stream from the tropics runs by a little to the eastward, while its nearly 70° of temperature marks the extreme north of the tropics.

The city is nearly square, and the streets are alternately broad and narrow and run at right angles across each other. The lanes come regularly between the wide streets and bear the name of the street north of them. The outskirts are planned differently.

The trade thoroughfare is Bay street, and along its sides are the mercantile houses, commission firms and cotton, naval stores and lumber concerns that dominate her large commerce and give to her the trade repute she has. On this antique street, picturesquely following the crest of the bluff, right upon the river's bank, we find the custom-house, exchange, postoffice, cotton exchange, board of trade building, Guckenheimer's stately grocery-house and the handsome wholesale cotton and other places of trade.

On Congress and Broughton streets the retail stores congregate, with an occasional wholesale house sandwiched in.

Bull street is the fashionable promenade, starting from the exchange on Bay street and running straight out to the parade ground, and on through the park to the southern city limits and the White Bluff shell road. Bull street, named after Col. Wm. Bull, who aided Oglethorpe in laying out the city, goes through five squares, in four of which are the monuments to General Greene, Colonel Gordon, Sergeant Jasper and Count Pulaski. The residences on this street are many of them handsome, while stately churches line reverently the squares; the Chatham Artillery and Huzzars' armories adorn it; Chatham Academy intellectually rears its front facing the lofty Presbyterian church, while farther on, where the barracks so long stood, the splendid De Soto Hotel enraptures the Northern millionaires, occupying the entire square, and a princely pattern of a modern hostelry.

South Broad and Liberty streets cross Bull at right angles, are wide, lined with fine dwellings, and with their two rows of lofty trees enclosing between, at its full length, a broad green sward, they are ideal streets, beautiful, and with a certain aristocratic aspect.

Forsyth Park, with ten acres, on which borders the 20-acre parade ground, is a marvel of scenic beauty, with its bordered walks amid stately pines and water oaks, and in the centre an imperial fountain embowered in flowers. There is no lovelier place in the world than this park in the spring, radiant in green and blooms, odorous with fragrance, the swards and foliage a living poesy and the fountain's spray a sweet sort of dreamy romance.

One of the chief charms of this fitly-called Forest City is its luxuriance of antique marks. One meets them everywhere. All kinds of quaint old symbols and things gladden the eye and break the modern uniformity. These ancient vestiges are delightful to the lover of the by-gone times and give a relish to the dear old place that no new glitter can ever substitute.

Association of Engineers of Virginia.

The annual meeting of the association was held at Roanoke, February 22. The following officers for the ensuing year were declared elected: President, Charles S. Churchill; first vice-president, J. C. Rawn; second vice-president, Prof. J. H. Fitts; secretary, L. J. Carmalt; treasurer, J. R. Shick; directors, George R. Henderson, Geo. P. Wood, R. H. Soule, Clarence Coleman, S. G. Gaillard, M. E. Yeatman; directors holding over, Prof. D. C. Humphreys, Prof. W. E. Anderson, C. G. Cushman.

Mr. René de Saussure read a paper on "The Construction of Theatres from an Optical Point of View," treating the subject geometrically and determining which is the most rational shape to give to the different floors of an opera-house or any assembly hall, circus, amphitheatre, etc., in order to give to every one the best possible view of the stage. Two or three new ideas were suggested, and may be of interest to architects in charge of the construction of a theatre by showing how to proceed to establish first the vertical section of the auditorium, then the plans of the different galleries.

At the evening session Mr. R. P. C. Sanderson started the discussion by reading a paper on "Heating and Ventilation." He recommended a constant supply of fresh warm air at seventy-two degrees or thereabouts, the quantity proportionate to the number of persons and gas jets in the room and the pressure greater inside the building than out. This is most nearly fulfilled for dwellings of any reasonable size by the hot-air furnace, but for larger buildings steam or hot-water systems must be used, supplemented with a fan to produce the necessary circulation of fresh air.

For the informal meeting of March 15 it was announced that the subject would be "Recent Progress in the Substitution of Steel for Other Materials in Construction," discussion to be opened by Mr. George R. Henderson. L. J. CARMALT, Secy.

IT is reported that Col. J. R. Sledge, of Texas, president of the cotton bureau, has interested $6,000,000 of capital in England. These funds are to be placed in New Orleans and thence distributed by the executive officers of the bureau among the cotton-growers in the form of loans, security being given by contracts for the delivery of cotton direct to spinners from the plantations. The Englishmen were so favorably impressed with the scheme that they proposed further to put on a line of steamships between Liverpool and New Orleans to carry the cotton at reduced rates, provided the bureau would take English goods in exchange. The bureau declined to bind itself to such an arrangement, but a representative of the English syndicate will visit this country in the spring and endeavor to make some bargain of that sort. The $6,000,000, however, is declared by Colonel Sledge to be assured.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department, on page 98 and 99.]

Lumber Directory.

Readers of the MANUFACTURERS' RECORD who may be in the market for lumber of any description are recommended to the directory of Southern lumber manufacturers and dealers which appears among the advertising pages.

Pascagoula Lumber Shipments.

The shipments of lumber, etc., from the port of Pascagoula, Miss., from November 1, 1890, to October 31, 1892, were as follows:

Articles.	1890-91.	1891-92.	Total.
Lumber and timber.....	122,645,785	123,898,350	246,544,135
Shingles.....	4,030,275	4,093,250	8,123,525
Total.....	126,676,060	127,991,600	254,667,660

The total value of the above shipments is $2,813,513.70.

Yellow Pine at the Fair.

W. L. Burton, of Louisiana, and E. F. Skinner, of Florida, the committee appointed by the Southern Lumber Manufacturers' Association, closed on Saturday last in New Orleans the contract for the erection of the vestibule in the forestry building at the World's Fair, which has been set aside for the Southern lumbermen. The contract was awarded to the Meridian Sash & Blind Co., and is to be constructed entirely of Southern lumber, nine-tenths yellow pine and one-tenth cypress. It will be about fifty feet square and will cost about $4000 when completed. The committee of the Mechanics, Dealers and Lumbermen's Exchange also met on Saturday and perfected arrangements for the exhibition of Louisiana woods in the forestry building. The plans of the exhibit were discussed, and will soon be in shape for active work. There are over sixteen different varieties of wood to be shown, and there will be 104 different classes into which the various woods will be subdivided. The committee recognizes the importance of making a fine showing which will attract attention to the resources of the State.

Rockford Furniture Manufacturers' Excursion.

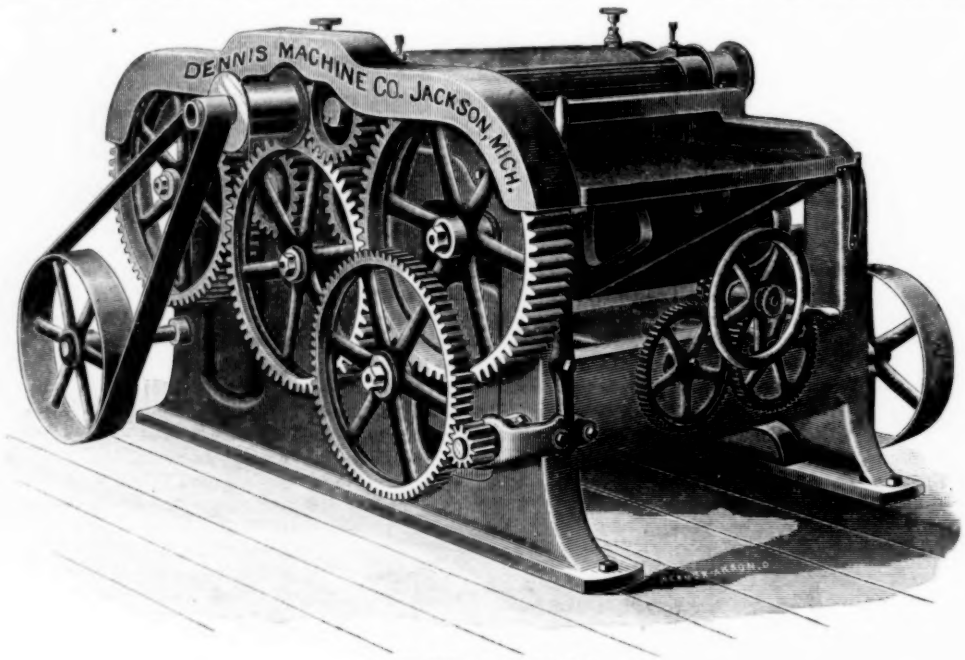
Early on Saturday last a train having a special car attached arrived in New Orleans with eighteen of the leading furniture manufacturers of Rockford, Ill., on board. They came by way of the Mississippi Valley Railroad, and were in charge of Mr. George C. Powers, industrial commissioner of the Illinois Central road. After visiting several points of local interest the party called in a body at the Mechanics, Dealers and Lumbermen's Exchange, and were cordially received by Secretary Dirmeyer and the members of the exchange. This excursion has its origin from a visit made last summer to Rockford by Mr. Harahan, of the Illinois Central, who, discovering that the various factories there consumed over 12,000,000 feet of hardwood and 6,000,000 feet of rosewood every year, communicated the fact to the furniture manufacturers of Rockford that the South had a large and fruitful supply of these woods. The matter was laid before the Rockford lumber commissioners with the result that it was decided to come South and visit Tennessee, Mississippi and Louisiana to examine the various woods of these States. Among the mills visited were the Otis Mill, Crescent City Manufacturing Co. and the Louisiana Cypress Lumber Co. So far the party of excursionists are well pleased with the trip and the country, and have seen opportunities to secure large lots of lumber needed in their business. The rates of freights from Southern points to Rockford were found to be favorable, and it is thought that a large and remunerative business will be established.

Logging by Steam.

This is the title of the latest "sketch book" issued by the Lidgerwood Manufacturing Co., the prominent hoisting and conveying machinery manufacturers of New York, Chicago, Boston, St. Louis, Portland, Pittsburg and Philadelphia. The purpose of this publication is well stated by the company, who say:

"This sketch book is issued to illustrate some devices which we have recently perfected for the use of lumbermen, and covers in its description the Butters patent log-skidder, which may be called a logging cableway, a cable transfer, a rigid transfer, and also our new engine for hauling logs on the surface of the ground, which latter finds its most extensive use in the far West. We are the sole licensees under the patents of Butters, Miller, Locke and North."

The illustrations accompanying the text are numerous and admirably executed pen sketches drawn from photographs, and show the Lidgerwood logging outfit in actual service. The book has an attractively designed cover, and, considered in its entirety, is one of the most artistic and interesting of the Lidgerwood "sketch book" series which have as yet come to our desk. Lumbermen will find it a valuable addition to their working library of trade literature, and would do well to apply for a copy at the New York headquarters of the Lidgerwood Manufacturing Co., 96 Liberty street, before the supply is exhausted.



NEW SMOOTHING PLANER.

New Smoothing Planer.

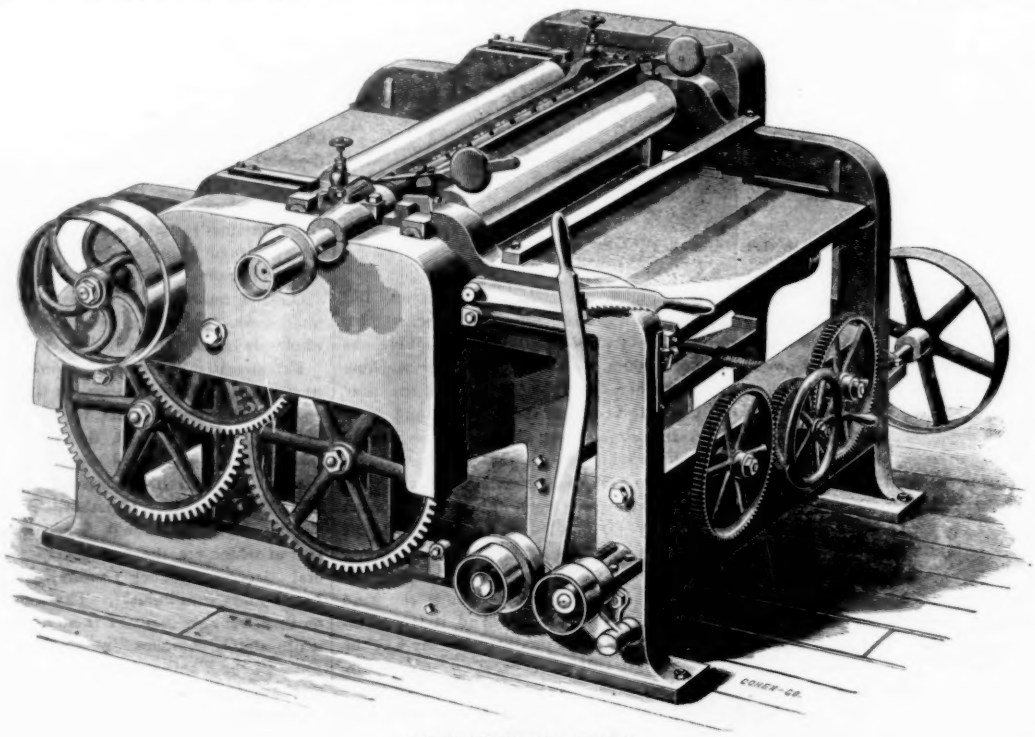
The Dennis Machine Co., of Jackson, Mich., have recently brought out the smoothing planer shown in the accompanying illustration. This machine is built to meet a demand for a planer which will do smooth and perfect work, not necessarily the cheapest machine on the market, but one which would come as near finishing its work as is possible to do on a planing machine, leaving as little as possible for other finishing machines, and thus be the cheapest in the long run.

The machine is built in a heavy and substantial manner, the 24-inch machine weighing about 3500 pounds and the 30-inch something over 4000 pounds. The frame is cored, which is considered to be the strongest form of casting. The table is supported on inclines running its whole length, which makes it perfectly solid at any point.

It has four feed rolls, all strongly geared and held down by weights. Its feed is very powerful, and takes the lumber entirely through the machine, and is arranged to stop and start instantly, and has two changes. The cylinders are made of the best crucible hammered steel, with bearings one and fifteen-sixteenths inches in diameter, seven and three-fourths inches long, and belted at both ends.

The bearings are ground so as to insure their being perfect. The bearing boxes are lined with the best pure Babbitt that can be obtained, and made self-oiling. The pressure bars are arranged so as to come at the nearest possible distance to the cylinder, thereby enabling it to plane short lumber without chipping the ends. It will plane one-sixteenth to six inches in thickness.

The machine is built in four sizes to plane twenty-four, twenty-six, twenty-eight and thirty inches in width. The pulleys on the cylinder are four inches in diameter, with a five-inch face, and are calculated to make 4000 revolutions per minute.



A NEW FURNITURE PLANER.

As represented in the cut, the arrangement is such as to require to be belted from above, but this can be altered where desired and fixed to take the belt from below.

A New Furniture Planer.

The planer shown in the accompanying illustration is designed and manufactured by the Buss Machine Works, of Grand Rapids, Mich. It has been made from new patterns, and belongs to the heavy and rigid class of machines which have found so much favor for accurate work and good wearing qualities.

The frame is cast hollow, and of such shape as to insure the greatest strength from the metal used, and withstand all strains or jars to which it may be subjected. The material used is the best that can be procured, and the workmanship is of the highest grade of excellence.

The table of this machine is constructed to raise and lower on a long incline, which is scraped to a fit, so that there is no possibility of any variation or change in the table, always insuring the same thickness the full width of the cut.

The adjustment of this table is provided for by a wheel and gearing, which, from the convenient position to the operator, can be readily changed from one position to another.

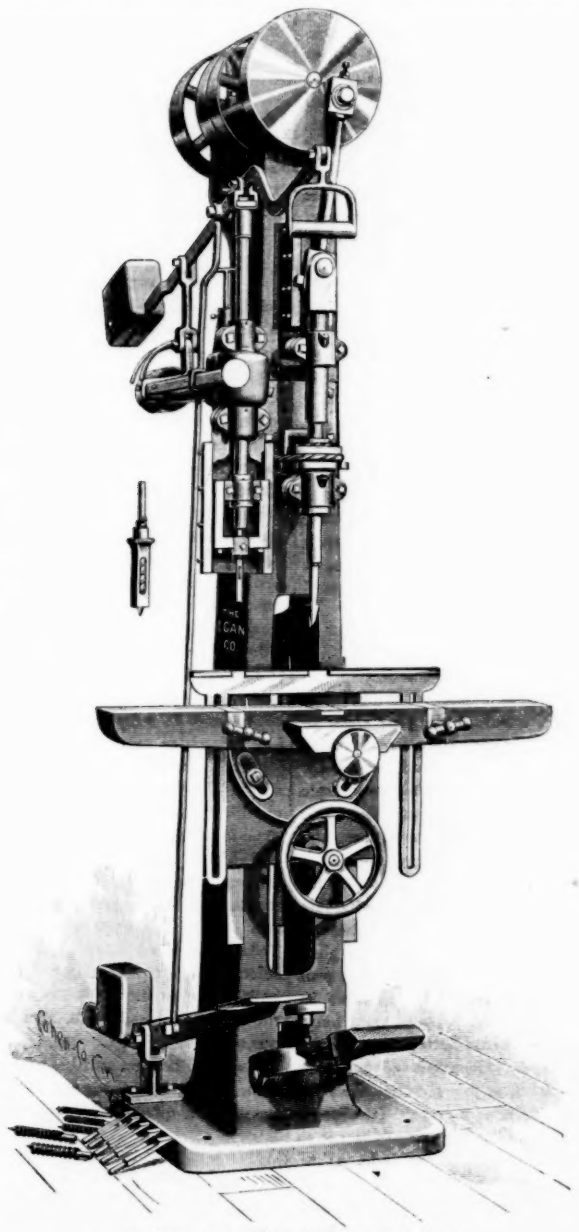
The feed consists of four and five and a-quarter feed rolls, all driven by a powerful arrangement of gearing, the gears being of large diameter, so that the amount of power required is reduced to a very small percentage.

The gearing is thoroughly protected by covering, and each machine is provided with a heavy countershaft, and is made in any size from twenty-four to sixty inches in width.

The tool has been designed with great care to fill the need of a machine which is powerful in action and at the same time will produce fine and accurate work, such as is needed by furniture manufacturers and piano and organ makers. All of its details have been given thorough attention, and it is thought that it will be found eminently satisfactory for the purposes for which it is intended.

Improved No. 2½ Mortiser and Borer.

An entirely new machine, which is being put on the market by the J. A. Fay & Egan Co., of Cincinnati, Ohio, is the mortiser and borer shown in the accompanying illustration. This machine has a square mortising attachment, and is one of the most useful which could be placed in a sash, door or blind factory, or for general work. It can be run as a regular standard mortiser, and instantly changed into a square chisel mortiser or both combined at one time. Any practical man will recognize at once the advantages and conveniences of a machine of this class for all kinds of work.



IMPROVED NO. 2½ MORTISER AND BORER.

The column is very heavy, is cored out, giving it a very stiff solid column capable of standing hard work. The chisel mandrel operates through a tapered gun-metal sleeve, so that all lost motion can be taken up, and the upper part of the mandrel sleeve is supported by an extra bearing, so that it is impossible for the mandrel to get out of line; consequently the truest work can be done and to the best advantage.

The automatic chisel reverse is without a doubt the best ever made, being operated by the treadle and reversing the chisel with a movement of but one-eighth of an inch of the bed, so that the chisel is held rigid at all times when mortising, and will reverse when the chisel is at the lowest point and table set to cut the deepest mortise. No other make of machine has this advantage.

The makers furnish five chisels and augers to match, namely, one-quarter, three-eighths, one-half, five-eighths and three-quarters of an inch, and also furnish one square chisel one-half of an inch with auger to match.

Southern Lumber Notes.

A PARTY of furniture manufacturers from Rockford, Ill., visited Memphis last week, and were entertained by the Memphis lumber dealers. They purpose visiting the Yazoo & Mississippi Valley Railroad territory with a view of getting their lumber supplies in future from points along the line of this road.

THE Spanish bark Maria Luisa Alfonso cleared from Brunswick, Ga., on the 21st inst. with 450,878 feet of lumber and timber for Valencia, Spain.

THE planing mill of Banes, Warrington & Pearson, at La Villa, near Jacksonville, Fla., was destroyed by fire on the night of the 22d inst. The machinery and stock was valued at $5000, on which there was about $2000 insurance with Dawkins & Williams's agency. The building was owned by the Refrigerator Ice Works, and was valued at $1500.

THE Butters Lumber Co., of Hub, N. C., manufacturers of cypress lumber and shingles, North Carolina pine, etc., has increased its capital stock to $1,000,000 and is building four new Servoss condensing driers, also putting in lumber assorter, etc.

THE Bluff City Lumber Co., of Pine Bluff, Ark., has purchased considerable new machinery, which it is adding to its plant.

MESSRS. N. B. TRELLUE & Co., of Patterson, La., are adding to their plant a lath mill, molder and picket machinery, and will manufacture moldings for the New York market, where Teche red cypress is beginning to take a firm hold.

THE Learned-Letcher Lumber Co. has purchased a new saw mill, and will at once add it to their present plant near Anniston, Ala.

MR. B. CRISLER has his new spoke factory at Meridian, Miss., completed and in full operation. Complete outfit of the latest improved machinery was put in, and he has orders enough to run the plant a year.

THE Morgan Lumber Co., of Little Rock, Ark., has obtained contract to furnish over 100,000 feet of lumber to be used as material for twelve barges which are to be built for the national government.

A SYNDICATE of Chicago and Wisconsin capitalists is now in Memphis negotiating for the purchase of 92,000 acres of timber land in Sunflower county, Miss. The land is owned by Memphis stockholders in the Sunflower Land & Manufacturing Co. and the price demanded is $3.00 per acre. There is very little doubt about the consummation of the deal, and it is the purpose of the purchasers to erect an extensive saw-mill plant, and a branch road will be built to the main line of the Yazoo & Mississippi Valley Railroad, ten miles distant.

ON the 8th inst. the Bradley-Ramsey Lumber Co., of Lake Charles, La., bought the entire milling plant and stock of lumber of the Mount Hope Lumber Co., and hereafter their recent purchase will be operated in connection with their large double mill. Both mills are new and equipped with the latest improved machinery, which will give the company an annual output of 50,000,000 feet, thus making it the largest lumber producer in the South.

A CHARTER was issued on the 25th ult. to the Pocatalico Boom & Lumber Co., of Ravenswood, Jackson county, W. Va., with a capital of $1500. Shares are $100 each, and are held by A. C. Tidd and others. The Nicola Lumber Co. was also chartered with a capital of $10,000. Its principal place of business is to be at Nicolette, Wood county, W. Va. The shares are $100 each, and are held by F. F. Nicola, of Pittsburg, Pa., and others.

MESSRS. ELLIS & COYNER BROS., of Waynesboro, Va., have purchased the ornamental wood works at Waynesboro, Va., and put same in operation.

THE bark Latona and the schooner Grace Andrews cleared from Fernandina on the 26th inst. with 400,000 feet of lumber each, bound for Rio Janeiro, Brazil.

THE Commercial Lumber Co.'s planing mill at Felton, Ga., was destroyed by fire on Saturday last, entailing a loss of $150,000.

AT Felton, Ga., on the 25th inst., the planing mill and several hundred thousand feet of lumber belonging to Dr. W. H. Williamson were destroyed. The insurance was $6500.

THE large lumber mill, etc., at Sibley, Ga., which was destroyed by fire a short time ago, will be rebuilt upon an extensive scale. Messrs. Johnson, Emminger, Birch and Caldwell, who owned the mill, have built a railroad through their property. The milling plant to replace the old one will be perfect in every modern appliance.

ONE of the largest barges ever brought to the port of Orange, Texas, is now loading at the Lutcher & Moore Lumber Co.'s mill for Galveston. It is 150 feet long and twenty-five feet beam, and will carry about 250,000 feet of lumber.

JUDGE D. R. WINGATE, of Orange, Texas, has sold his timber land holdings in Newton county, amounting to about 14,000 acres, to Daniel Saunders, of Boston, Mass. The lands are situated near the Sabine river, and are available for the mills at Orange. The price paid is said to be $75,000.

BANCROFT, SONS & Co.'s saw mill at Orange, Texas, has been shut down for a few days in order to make some repairs. They intend putting in new headblocks at a cost of about $1200 and a new planer which will nearly double their capacity.

THE trustees of the Texas Pine Land Association visited Beaumont last week in order to select a river front for the tramroad to be built in order to fulfill their contract with the Reliance Lumber Co. to furnish 120,000,000 feet of logs.

THE Edisto Cypress Shingle Co., of Branchville, S. C., will start up its new mill this week.

THE Palmetto Cypress Co., of Georgetown, S. C., has lately increased the capacity of its mill.

IT is said that Joel E. Brunson will put in a new cypress saw and shingle mill at Sumter, S. C.

JOHN H. KIRBY, of Houston, Texas, has purchased 16,000 acres of long-leaf yellow pine timber land on the Sabine river in Newton county, Texas.

THE Central Georgia Land & Lumber Co., of Sibley, Ga., expects to put in a new saw mill, planing mill, dry-kilns, etc., with a capacity daily of from 40,000 to 60,000 feet of lumber.

THE Queen City Spoke & Wheel Co., whose plant at Meridian, Miss., was destroyed by fire some time ago, has decided to rebuild on a much larger scale. A reorganization of the concern has been arranged, and work on the new factory will commence soon.

LUMBER MARKET REVIEWS.

Baltimore.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, March 2.

The general lumber market cannot be called active at present, but the outlook is encouraging for considerable business during the early spring and summer months. Receipts of all kinds of lumber continue light, and the very inclement weather prevailing during January and up to date has been quite a drawback to this important industry. The indications are for more favorable weather conditions, and an important movement will likely follow in every department of the trade. The prospects of a demand for building purposes is better, and as communication is established with suburban points the demand for lumber will increase. The yellow pine trade at the moment is quiet, with receipts light and stocks poorly assorted, while values are decidedly firm at list figures. In air-dried lumber prices are steady, with a moderate inquiry. All hardwoods continue in fair demand, with stocks in some cases light, and for all desirable lumber of popular woods prices are firm. Planing mills and box factories are all fully employed and report trade as fairly active, with prices only fair. Cypress shingles are firm, with a good inquiry and stocks reduced. Laths are nominally steady. The foreign exports from this port for the month of February are as follows: Lumber 1,337,000 feet, logs 2100 and staves 34,000.

The following list represents the prices current at this date:

VIRGINIA AND NORTH CAROLINA PINE.			
5-4x10 and 12 No. 2, kiln dried	$17 00@	17	25
4-4x10 and 12 No. 1, " "	19 75@	20	25
4-4 narrow edge, No. 1, kiln dried	17 25@	17	75
4-4 wide edge, " " "	22 50@		—
6-4x8, 10 and 12, " " "	22 25@	23	50
4-4 No. 1 edge flooring, air dried	15 50@	16	50
4-4 No. 2 edge flooring	13 00@	14	00
4-4 No. 1 12-inch stock	16 50@	17	50
4-4 No. 2 " "	13 50@	14	50
4-4 edge box or rough wide	9 00@	10	00
4-4 " " (ordin'y widths)	8 50@	9	00
4-4 " " (narrow)	8 00@	9	00
4-4x12 " "	10 50@	11	00
¾ narrow edge	7 00@	8	00
¾ all widths	8 00@	8	50
¾ 10x16 wide	8 50@	9	50
Small joists, 2½—12, 14 and 16 long	8 50@	9	50
Large joists, 3—16 long and up	10 00@	11	00
Scantling, 2x3—16 and up	10 00@	11	00
WHITE PINE.			
1st and 2d clear, 4-4, 5-4, 6-4 and 8-4	48 00@	52	00
3d clear, 4-4, 5-4, 6-4 and 8-4	43 00@	44	00
Good edge culls	15 00@	16	00
Good stock	17 50@	18	00
CYPRESS.			
4-4x6, 16 feet, clear	22 00@	24	00
4-4x6, 16 feet, fencing	13 00@	14	00
4-4 rough edge	9 50@	10	50
4-4 edge, Nos. 1 and 2	18 50@	20	50
HARDWOODS.			
Walnut.			
¾, Nos. 1 and 2	75 00@	100	00
4-4, Nos. 1 and 2	90 00@	100	00
5-4, 6-4 and 8-4	95 00@	110	00
Nos. 2½, 3 and 4	125 00@	130	00
Newell stuff, clear of heart	125 00@	130	00
Culls	30 00@	35	00
Oak.			
Cabinet, white and red, plain sawed and good 1 and 2, 8 in. and up, 12 to 16 feet long, 4-4	35 00@	40	00
5-4 to 8-4	35 00@	40	00
Quartered white, 1 and 2 quality, all figured, 6 in. and up wide, 4-4	50 00@	53	00
Culls	10 00@	15	00
Poplar.			
Nos. 1 and 2, ¾	22 50@	24	50
" " 4-4	28 00@	31	00
Nos. 5, 6 and 8-4	30 00@	32	50
In yellow pine cargoes, log run stock	12 00@	16	00
Culls	12 00@	14	00
SHINGLES.			
Cypress, No. 1 hearts, sawed, 6x20	7 50@	7	75
No. 1 saps, sawed, 6x20	5 50@	6	00
No. 1 hearts, shaved, 6x20	6 50@	7	00
No. 1 saps, shaved, 6x20	5 00@	5	25
LATHS.			
White pine	2 70@	2	75
Spruce	2 35@	2	40
Cypress	2 15@	2	20

Norfolk.

[From our own Correspondent.]

NORFOLK, VA., February 27.

The weather conditions have been very favorable for an active movement in lumber, and the market now is getting back to its former vigorous condition. The severe weather in December and January, besides curtailing the output, disarranged more or less the general market, but at present everything surrounding the industry is of a most promising character. The demand for North Carolina pine is very active, and vessels are somewhat scarce, so that the shipping facilities are not as good as they might be. Air-dried lumber is quite firm, and under light receipts prices keep up well; dry and clear 4-4 flooring $13.50, best 4-4 rough edge $13.00. Cypress timber is also in good demand, and for boards 1x6 16 feet long $20.00 is the quotation; boards 1x6 16 feet rough $10.50 to $11.50. There is some demand for shingles, and values are very steady at $7.00 for No. 1 hearts and $5.50 for No. 2. There never was a more promising outlook for dressed lumber than at present, and all the planing mills here are working up to their full capacity.

Kiln-dried North Carolina pine lumber f. o. b. at this port is quoted as follows:

5-4 rift No. 1	$27 50@	—
5-4 rift No. 2	16 00@	—
5-4x10 No. 1	20 00@	—
5-4x12 No. 1	20 50@	—
5-4x10 No. 2	15 00@	—
5-4x12 No. 2	16 00@	—
5-4 edge No. 1	17 50@	—
5-4 edge No. 2	13 50@	—
4-4 rift No. 1	25 00@	—
4-4 rift No. 2	15 00@	—
4-4x10 No. 1	18 50@	—
4-4x12 No. 1	19 50@	—
4-4x10 No. 2	15 00@	—
4-4x12 No. 2	15 00@	—
4-4 edge No. 3	9 50@	—
5-4 edge No. 3	10 50@	—
4-4x8, 10 and 12 culls or box	9 00@	to 50
4-4x5-4 edge, cull or box	8 50@	—

Charleston.

[From our own Correspondent.]

CHARLESTON, S. C., February 27.

The outlook in the lumber market is at present very encouraging at this and all adjacent milling points in the State. Mills are reported as fully employed, and the demand from Northern ports, as well as the West Indies, is rather better in tone. The shipments during the week were as follows: Schooner Nellie Coleman, with 66,500 feet pitch pine lumber for Port Antonio, Jamaica, and 30,000 shingles; schooner Sylvia Hall, with 300,000 feet of lumber for New Haven, and the New York steamer had in her cargo 40,000 feet of lumber. In the list of values there is no decided change, and prices remain steady. Merchantable lumber is quoted $14.00 to $16.00 for city sawed and $12.00 to $14.00 for railroad, square and round timber $9.00 to $13.00 for railroad and $8.00 to $11.00 for raft, dock timber $4.50 to $6.50 and shipping $8.50 to $10.50. Shingles are in good demand and steady at $5.00 to $7.00 per thousand.

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1892, TO FEBRUARY 24, 1893.

Exported to	1892-'93. Feet.	1891-'92. Feet.
New York	18,113,163	15,523,592
Boston	634,740	.....
Philadelphia	2,154,292	4,229,000
Baltimore	840,000	534,000
Other United States ports	709,000	998,000
Total coastwise	22,451,195	21,284,592
Great Britain	.....	.....
Palermo	.....	.....
France	.....	.....
West Indies	1,401,096	1,505,300
South America	.....	177,000
Nova Scotia	.....	.....
Other foreign ports	.....	578,174
Total foreign	1,401,096	2,260,474
Grand total	23,852,291	23,345,056

Savannah.

[From our own Correspondent.]

SAVANNAH, GA., February 27.

The movement at this port in lumber is now very considerable in volume, and everything indicates a progressive stage during the current year. All reports from the interior are very encouraging, and at Cordele and other primary milling points throughout the State mills are generally well supplied with orders. There is at present a good demand from Northern ports, and vessels are now loading for New York, Baltimore and other Northern ports. There is also a demand from the West Indies and some inquiry from South American ports. The foreign demand is light. Exports coastwise during the week aggregate 478,552 feet of lumber and 15,037 crossties, equal to 524,000 feet, making 1,002,552 feet in all to New York, and 610,164 feet to Philadelphia. In the list of values there is no change, and prices for desirable lumber are very firm. Lumber freights are unchanged and sail rates are more or less nominal. From this and nearby Georgia ports $4.25 to $5.00 are the figures for a range including Baltimore and Portland, Me. To the West Indies and Windward the figure is nominal, to Rosario $14.00 to $15.00, to Buenos Ayres or Montevideo $12.50, to Rio Janeiro $15.00 and to Spanish and Mediterranean ports $10.00 to $11.00. Rates to the United Kingdom for orders are nominal for lumber at £4 5s. per standard. Steamer rates to New York and Philadelphia are $7.00, to Boston $8.00 and Baltimore $5.50.

Pensacola.

[From our own Correspondent.]

PENSACOLA, FLA., February 25.

This week has been remarkably active in lumber and timber, and the market is generally of a very satisfactory character. There is not much demand for hewn timber, and quotations are nominally unchanged. In sawn timber there is a good inquiry, both from Europe, the West Indies and South America. The high waters of the past week have brought large receipts of sawn timber to Ferry Pass, and prices are a little off this week in consequence. The quotations today are on a basis of eleven to eleven and a half cents, according to average and quality, with a fairly active demand. There are about seventy-five vessels of all tonnages in port at present, and the prospects are that shipments will be very large during March and April. Already this month the shipments are very heavy, and during the past week aggregate 5,728,200 superficial feet of lumber and timber. The total shipments of lumber and timber from the 1st of January to date are 51,756,212 feet. The demand from South America is very active at present, and during the week about 3,000,000 superficial feet of lumber and timber have been shipped to Brazil and the Argentine Republic.

Mobile.

[From our own Correspondent.]

MOBILE, ALA., February 27.

The operations during the past week in lumber and timber have been characterized by considerable activity, and prices for hewn and sawn timber show very little change. The exports were very light this week, aggregating 30,486 cubic feet, and since September 1, 1892, they amount to 1,081,105 cubic feet, against 1,028,625 for 1891-92. In sawn timber 97,459 cubic feet were exported, and since September 1, 1892, 1,129,558 cubic feet. There is a good demand for lumber, and mills at this port and at all adjacent milling sections in Alabama and Mississippi are very busy, and prices are reported better than for the past two seasons. Receipts of logs are very large, and there is a good demand for all supplies coming to market. In cypress lumber and shingles the activity is not so pronounced; stocks are very light, while the supply of logs is also light both at cypress lumber mills and shingle mills, and the season will be about over in the next two months unless there is a rise in the streams. The shipments of lumber this week have been to the West Indies, Mexico and Europe, with small quantities going to Northern ports, the whole aggregating 1,661,893 superficial feet, and since September 1, 1892, 38,007,206 feet, against 27,524,625 for the corresponding period last year. Freights are unchanged; the rates on lumber are still $6.00 to $7.00 per thousand to the West Indies, $6.00 to $6.50 for coastwise, and to Rio Janerio nominally $18.00. Timber to the United Kingdom is still quoted 27s. to 29s. per load for hewn and £4 5s. to £4 10s. per standard; deals £4 5s. to £4 10s. per standard.

New Orleans.

[From our own Correspondent.]

NEW ORLEANS, LA., February 28.

There is considerable activity at this port in lumber and timber, and the situation at present presents a very encouraging outlook. We have had many Northern visitors here during the current month looking at our facilities for handling lumber and taking in the industry generally, and it is fair to presume that the presence of Northern capitalists will benefit our trade. The receipts of lumber are very free at present, and from the secretary of the Merchants, Dealers and Lumbermen's Exchange the following figures are taken:

Material.	Week ending Feb. 24, 1893.	August 1st to date, 1892-93.	August 1st to date, 1891-92.
Lumber	1,493,346	44,656,597	36,787,975
Shingles	19,000	2,849,550	4,105,750
Laths	145,000	3,095,300	1,816,904
Oak staves	46,800	2,337,881	1,273,490
Cypress "	15,400	1,838,154	3,685,695

Prices throughout the general list are very steady under a fairly active inquiry. The committee appointed by the Southern Lumber Manufacturers' Association has closed the contract for the erection of the vestibule of the forestry building at the World's Fair. The Meridian Sash & Blind Co. was the successful bidder.

Beaumont.

BEAUMONT, TEXAS, February 25.

All indications point to an active trade in lumber and timber during the spring and summer months, and at this and all adjacent milling points reports are of a favorable character. The demand for lumber holds steady, and prices are firm, with a hardening tendency. The *Journal* in its review of the lumber market says: "Market conditions maintain a pleasing evenness as to demand, which is almost equal to the producing capacity, while as to the price a slight change may be noted in a small advance. At this time Texas dealers are the principal buyers of yard stocks, the movement of which is large and steady, although orders are coming in quite freely from outside points, and the promise is encouraging for a substantial increase in the number as soon as the weather shows indications of the arrival of spring." There is a constant demand from railroads, and all the mills have timber orders sufficient at present. The rates for lumber to outside States might be more favorable, and likely will be adjusted to favor the lumber community. Constant developments of lumber territory are in progress, and during the week the trustees of the Texas Pine Land Association were here to select a river front for the tramroad to be built in order to fulfill the contract with the Reliance Lumber Co. to furnish 120,000,000 feet of logs. Messrs. Davis and Nelson, of Boston, trustees of this association, will have a survey made at once, and decide the question of location for this tramroad.

Orange.

[From our own Correspondent.]

ORANGE, TEXAS, February 25.

Under bright and favorable weather the lumber trade in this section is becoming more active, and with a good supply of cars shipping facilities are much better, and the output for the week has been larger than usual. Prices remain very steady, fluctuating in narrow limits, and there is a good demand for certain grades. All the mills are working up to their full capacity, and the supply of logs is very large, all the booms being jammed with a great assortment of timber in all sizes, suitable for bridges, stringers or ship timber. The Lutcher & Moore Lumber Co. is cutting large timbers 14x16 inches for the Galveston Construction Co. that are very handsome, and are turned out with as much ease as timbers of half the size. A number of dealers have been in the market this week and have filed some valuable orders. There are a number of vessels loading here at present for Galveston, La

Porte and New Orleans. The schooner Cornell, of Boston, has been loading at Sabine Pass, and sailed yesterday with 325,000 feet of lumber for Tampico, Mexico. The schooner Silas also left yesterday for La Porte with lumber from Gilmer's mill.

IRON MARKETS.

Philadelphia.

[From our own Correspondent.]

PHILADELPHIA, March 1.

The general features of the iron market have not changed in any important particular during the past week. The recent financial embarrassment of two large concerns engaged in the finished-iron trade has tended to have a depressing effect on the whole market. In pig iron there continues to be a heavy business doing, but the sales are generally in the usual small lots which are needed for actual and immediate wants. The better grades of iron are not in plentiful supply, and prices are therefore not so weak and irregular as is the case with other brands, which are sufficiently numerous to enable consumers to postpone any heavy buying until the market clears itself. It is likely that the present irregularity in the demand and prices will continue until there is some settlement of the Lake Superior ore question, which at the present time is the disturbing feature of the situation. The fact that some of the leading producers are willing to accept orders from their customers for iron to be delivered during the balance of the year at the ruling prices confirms many buyers in their policy of allowing the future to take care of itself. There is at present no change in the general quotations of Northern and Southern irons, although the majority of sales are between the two extremes named, with some of the favorite brands still commanding outside figures. These prices are for material delivered at tidewater or its equivalent, with Southern iron at points in central and southern Pennsylvania and as far south as Baltimore offered at the usual concessions from these quotations.

Standard Pa.	No. 1 X	$14 50@ 15 00
" "	No. 2 X	14 00@ 14 50
"	Forge	13 00@ 13 50
Southern coke	No. 1 foundry	14 00@ 14 50
" "	No. 2 "	13 50@ 13 75
"	gray forge	13 00@ 13 25

Pittsburg.

[From our own Correspondent.]

PITTSBURG, March 1.

Practically the situation in the iron and steel markets remains as it stood last week. If there has been any change it is a slowing up in the demand to some extent. There is an active demand and prices are not suffering, but, after all, there is that indefinable something, so easy to see but so difficult to describe, hanging about the market that is not assuring. Buyers are sending in orders as strongly as they can be expected to do without demur as to prices, and sellers are disposing of their stocks at rates that are satisfactory, but there is a lack of briskness about the situation. The most favorable thing is that there are very few, if any, complaints from furnacemen, who seem to be of the opinion that the next two months will bring them a stronger demand. If that should be the case it is pretty certain that prices will advance. Gray forge, which is now so close to the old mark of $12.50, will go back to it easily, and it is more than likely that Bessemer will continue its upward movement. Whether it will reach $14.00 between now and May 1 is of course only a guess, but if the demand grows as strong as most men expect it will, the guess will certainly develop into a fact.

The other view of the market is that the existing improvement is about at an end, but even if it is not, a weakening process will enter within a few days and force the prices, particularly of Bessemer and gray forge, down to the extremely low position of a few weeks ago. The holders of this opinion say it is based on the slowness and heavy drag on the other lines of pig, and that alone will force down Bessemer and gray forge, which hold the most advantageous position. Between these two views it is not easy to choose, but the weight of numbers is in favor of the more hopeful one. The quotations of last week are substantially unchanged and are as appended. It may be said, however, that about all the sales that have been made were for small lots and commanded the higher figures of the quotations:

Gray forge	$12 25@ 12 40
Mill iron	12 50@ 12 75
Foundry No. 1	14 00@ 14 10
" No. 2	12 95@ 13 10
Bessemer	13 60@ 13 75

Wheeling.

[From our own Correspondent.]

WHEELING, W. VA., March 1.

There is very little new to report with regard to Wheeling district iron market this week. The most noticeable feature is the checking of the upward tendency that was noticeable in a slight degree last week, and which it was hoped, and not wholly without cause, would continue. When the word checked is used it does not mean stopped entirely, for things generally still show signs of improvement, though they are weak and not likely to last long.

Bessemer pig, which was tending upward quite rapidly, has almost come to a standstill and can be bought at last week's figures again. There have been several fair-sized transactions this week, but none of them could be recorded as more than ordinary. The soft-steel makers are sold well ahead and are able to still book some business for May and June deliveries, which indicates that, although Bessemer pig is stationary, there will not be any backward movement till present needs are all supplied.

The demand for mill iron is a little weaker, owing to decreasing demand. Finishing mills are doing well to keep up to three-quarter capacity, and some of them are hardly doing that. Sheet iron, wrought pipe, skelp and merchant bars are not in heavy demand, and mill iron depends upon these for its prestige. Transactions aggregating about 3000 tons have been reported this week, but the deliveries are to be made in advance.

Foundry irons are still slow, but steady, which is as much as can be said for any brand. Foundry has not fluctuated but little in a long time, the greatest slide in the scale of prices having taken place in the last month.

Prices are quoted as follows:

No. 1 mill iron	12 25@ 12 50
No. 1 foundry	14 25@ 14 50
No. 2 "	13 50@ 13 60
No. 3 "	12 60@ 12 75
Bessemer	13 50@ 13 75

Cincinnati.

CINCINNATI, February 25.

The week has been made interesting to the iron trade, mainly by events that have occurred outside of it and are yet in some degree connected with it, namely, the sensational events in the New York stock market and the continued shipment of gold. Under such influences it is hardly to be expected that there should be any improved feeling. At the same time several quite large transactions have been closed.

The iron trade as a whole views with little alarm the happenings in New York. It realizes that it has been on hard pan for a year or two past; that most concerns have by enforced economies and conservative management put themselves in the safe position; that prices are so low that nothing more unfavorable can happen in that direction, and generally that whatever changes may be ahead must be for the better rather than for the worse.

In spite of money working somewhat closer, settlements have been unusually good. Sales have been widely distributed and very numerous, though generally in small lots to meet actual needs. The multiplicity of carload orders seems to show that stocks generally in buyers' hands are down to close margins. There is also a good deal of pressure to get iron through from furnaces quickly on existing contracts. On the whole, the situation is a waiting one. We make no changes in quotations.

We quote for cash f. o. b. cars Cincinnati:

Southern coke	No. 1 foundry	$13 25@ 14 00
" "	No. 2 foundry and No. 1 soft	12 00@ 12 75
Hanging Rock coke	No. 1	15 50@ 16 00
" "	charcoal No. 1	18 50@ 19 50
Tennessee charcoal	No. 1	16 00@ 16 50
Jackson county stone coal	No. 1	16 00@ 16 50
Southern coke, gray forge		11 00@ 11 75
" "	mottled	10 75@ 11 25
Standard Alabama car wheel		18 00@ 19 00
Tennessee car wheel		17 00@ 17 50
Lake Superior car wheel		17 50@ 18 00

ROGERS, BROWN & CO.

Chicago.

CHICAGO, February 25.

The market has shown little change during the past week. Some quiet buying in Northern and Southern cokes has been going on, and a few large orders have been placed, furnaces showing some disposition to grant concessions in price for large business and early delivery.

The railroad blockades and heavy weather are interfering to a large degree with the prompt transportation of freight, and many consumers who have not bought material in advance of their needs are being badly inconvenienced.

Lake Superior charcoals are quiet; buying moderate.

We quote for cash f. o. b. Chicago:

Southern coke	No. 1 soft	$13 35@ 13 60
" "	No. 2 soft	12 85@ 13 00

ROGERS, BROWN & MERWIN.

St. Louis.

ST. LOUIS, February 25.

An improvement in the market this week, both in sales and prices, is noticeable. Some large orders have been placed and others are being negotiated.

There does not seem to be the same eagerness on the part of some of the smaller furnaces to dispose of their iron at further reductions, as the prices already reached puts their product on the market at about cost, and a large part of their output has been closed out.

The scarcity of cars has been of much annoyance to consumers who have let their stocks run down, and the uncertainty of shipments and delays on orders which were placed to be filled "at once" will cause buyers to anticipate their wants several months ahead, and larger orders will be the result.

We quote for cash f. o. b. St. Louis:

Southern coke	No. 1	$13 75@ 14 00
" "	No. 2	12 50@ 12 75
" "	No. 3	12 25@ 12 50
"	gray forge	11 50@ 11 75
"	charcoal No. 1	15 50@ 16 00
Missouri "	No. 1	14 00@ 14 50
Ohio softeners		16 50@ 17 00
Lake Superior car wheel		17 50@ 18 00
Southern " "		18 25@ 18 50
Frick's Connellsville foundry coke		—@ 5 65

ROGERS, BROWN & MEACHAM.

Louisville.

LOUISVILLE, February 25.

Inquiry has been better the past week, both in number and size, although but few trades of consequence have been reported. Buying is generally light, and efforts to get business bring out very low prices, but buyers insist on still further concessions, which in some cases have met with flat refusals by producers. The immediate outlook is not considered very encouraging, but it does look as though prices are about as low as they can go without seriously affecting the producers.

HOT BLAST FOUNDRY IRONS.		
Southern coke	No. 1	$13 50@ 13 75
" "	No. 2	12 50@ 12 75
" "	No. 3	12 00@ 12 25
" charcoal	No. 1	16 00@ 17 00
" "	No. 2	15 50@ 16 00
FORGE IRONS.		
Neutral coke		11 50@ 12 00
Mottled		11 00@ 11 25
CAR-WHEEL AND MALLEABLE IRONS.		
Southern (standard brands)		20 00@ 21 00
" (other brands)		18 50@ 19 50
Lake Superior		19 50@ 20 50

HALL BROS. & CO.

Southern Iron Notes.

THE Virginia Mining & Investment Co., of Staunton, Va., held its annual meeting last week. The report of the president was very favorable to the company's success, and it was shown that the work done on its property has exposed a valuable deposit of manganiferous ore, which is being shipped to the Carnegie Company, of Pittsburg. With additional machinery a large quantity of this ore could be more thoroughly mined, and thus made a source of great profit.

THE new Rome (Ga.) furnace has resumed operations and is running at its full capacity of forty-five tons of pig iron daily. L. S. Colyer, of Chattanooga, is president of the company that owns the plant.

A PARTY of Eastern capitalists have purchased about 6600 acres of iron lands near Llano, Texas, through R. D. Lauderdale, and propose instituting extensive developments.

THE Olive iron mines at Bessemer, Texas, will be more thoroughly developed very shortly, as a considerable quantity of new machinery will be put in. Ore has been touched in a vertical shaft at a depth of less than fifty feet. Seventy-five men are now working the mines, and 200 more will be added soon.

THE Watts Steel & Iron Co., of Middlesborough, Ky., has leased some iron-ore banks in Grainger county, Tenn., and has started developing same.

TRADE LITERATURE.

A PAMPHLET issued by P. Duvinage & Co., of Brooklyn, N. Y., summarizes in a forcible style the advantages and importance of this firm's specialities in building construction. The applications of the anchor-plates, post-caps, brackets sill-plates, pier-caps, roof-truss castings, etc, manufactured by this firm are explained and illustrated. The publication is of interest to architects, builders, contractors, etc.

IMPROVED rotary cut veneer machinery and improved automatic feed veneer clippers, as well as special machinery for working veneer products, are well covered in a pamphlet issued by Coe & Wilkes, of Painesville, Ohio, the well-known manufacturers of this class of machinery. The information it conveys is of a useful character, and the logical presentation of the merits of the firm's machinery, backed up by some flattering testimonials, offers to users of veneer machinery some suggestive pointers.

A PLEASING and tasteful catalogue is that just issued by J. W. Penfield & Son, of Willoughby, Ohio. It is devoted to the Auger brick machinery made by this firm, and is one of a series of catalogues that it issues. The pamphlet is replete with well-executed engravings, and the explanatory portion is to the point. The machines it treats of have already received wide recognition by reason of their high grade, and a special catalogue is necessary to supply the demand for information relative to them.

THE Daily News Almanac, published by the Chicago *Daily News*, compasses a wide circle of instructive matter. The political feature of the almanac covers more than 100 pages. A brief history is given of all the presidential nominating conventions and caucuses since Washington. Details of our difficulties with Chili and Italy, the progress of the Bering sea dispute and retaliation policy towards Canada are interesting chapters. The World's Fair, the census, the currency and a large number of other subjects of value to intelligent men show careful treatment.

ONE of the most complete specimens of trade literature brought to our notice is the catalogue now being sent to machinery users by the Jeffrey Manufacturing Co., of Columbus, Ohio. Its 250 and more pages are devoted to the extensive chain belting, elevating and conveying machinery of the company. This machinery is capable of application to the handling of material of all kinds and under almost all conditions. The large lines of chains manufactured by the company has been augmented by the addition of malleable and steel chains, and special attention is directed to this departure. Several chapters are devoted to the stone-crushing plants, transmission of power by rope, phosphate machinery, coal-mine equipment, including screening and storing machinery, ventilating fans, electric mining machinery, electric motor cars for mines, coal and coke crushers, breakers, etc., supplied by the Jeffrey Company. The book is profusely illustrated, and the text lucidly sets forth the advantages and usages of the various machinery covered.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

☞ In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Alabama—Gold Mines.—The Lucky Joe Mining Co. has been organized by Captain Phillips and Joe Brown to develop gold mines in Alabama, near Tallapoosa, Ga.; office in latter city.

Anniston—Saw Mill.—The Learned-Letcher Lumber Co. will put in a new saw mill.

Demopolis—Lumber Mills.—The Demopolis Hardwood Lumber Co. is erecting lumber mills.

Florence—Cotton Mill.—The Cherry Cotton Mills have been organized to operate the Mountain City Mills, previously noted as to be removed to Florence. Considerable additions will be built and improvements made. N. F. Cherry is president.

Huntsville—Brick Works.—P. H. Moore, of Birmingham, will establish in Huntsville a plant for the manufacture of a patent brick invented by E. B. Carter.

Jacksonville—Cotton Mill.—Endeavors are being made to organize a $200,000 stock company to erect a cotton mill. George P. Ide can inform.

Opelika—Cotton Mill.—A new cotton-mill company may be organized. F. P. Randle can inform.

ARKANSAS.

Little Rock—Cooperage.—Henry M. Cooper, Logan H. Roots and R. A. Edgerton are the incorporators of the Little Rock Cooperage Co., noted last week; capital stock $80,000.

Little Rock—Cottonseed-oil Mill.—Swift & Co. and Nelson Morris & Co., of Chicago, Ill., will jointly erect at Little Rock a cottonseed-oil mill of 160 tons capacity daily. Contract is let and the plant will cost about $120,000.

Marked Tree—Saw Mills.—William C. Deney, William Bradshaw, Edwin H. Chapman and George B. Gray have incorporated the Marked Tree Saw Mill Co. with a capital stock of $5000.

Rover—Flour Mill and Cotton Gin.—Sid Crowell will rebuild his flour mill and gin reported in this issue as burned.

FLORIDA.

Jacksonville—Planing Mill.—Banes, Warrington & Pearson will rebuild their planing mill reported in this issue as burned.

Leitner—Rock Quarries.—J. B. Brown, of Gainesville, will open rock quarries near Leitner.

Myers—Planing Mill.—Wilhelm & Son, noted last week, are also erecting a planing mill.*

Ocala—Saw Mill.—Meffort & Leonard, of Lowell, have erected a saw mill at Gary's Pond.

Pensacola—Extract Factory.—T. A. Boardman will establish an extract factory.

GEORGIA.

Athens—Harness Factory.—Walter Leverette, of Knoxville, Tenn., contemplates starting a harness factory in Athens.

Atlanta—Car Works.—A plant for the manufacture of cars is to be built near Atlanta by the Piedmont Car Construction Co.

Barnesville—Water Works.—The citizens have voted an issuance of bonds for the construction of water works. The mayor can give information.

Brunswick—Hardware Company.—F. M. Scarlett and R. V. Douglas have incorporated the Douglas Hardware Co. with a capital stock of $20,000.

Cedartown—Machine Shops.—The Georgia Central Railroad will build shops in Cedartown.

Dahlonega—Gold Mines.—The Chestatee Co., recently organized, is developing gold mines near Dahlonega, putting in a pump and electric plant complete, etc.

Felton—Planing Mill.—The Commercial Lumber Co. will rebuild its planing mill reported in this issue as burned.

Hogansville—Cotton Mill.—A cotton-mill company has been organized and will erect a factory.

Milledgeville—Water Works.—Edwin F. Partridge, Wm. J. Perot, Jr., Jos. S. Keen, Jr., and H. Bayard Hodge, of Philadelphia, Pa., and Jos. W Hawley, of Media, Pa., have applied for the incorporation of the Milledgeville Water Co., to operate water works. The capital stock authorized is $80,000.

Millen—Grist Mill and Gin.—William Brinson will rebuild his grist mill and cotton gin reported in this issue as burned.

Sibley—Lumber Mills.—The Central Georgia Land & Lumber Co. will rebuild its recently burned mills.

Tallapoosa—Emery Works and Machine Shop. The Southern Emery Wheel Co. is about to put in machinery for crushing and bolting corundum and for manufacturing hones, etc. The company will also erect a machine shop to manufacture a patent grinding machine.

KENTUCKY.

Lexington—Water Works.—The Lexington Water Works Co. will build a new reservoir. Site has been purchased for $30,600.

Louisville—Fruit Company.—L. L. Parks, H. W. Steinhelper and A. W. Garrett have chartered the Kentucky Desiccated Fruit Co. with a capital stock of $50,000.

Louisville—Tobacco Factory.—The Harrison-Weissinger Tobacco Co. will rebuild their tobacco factory reported in this issue as burned.

Louisville—Dealers.—The Louisville Whiskey Co. has been incorporated to deal in liquors; capital stock $100. Incorporators, L. Hellman, Jos. J. Hayes and E. S. Jackman.

Louisville—Distillery.—Frank F. Reed and Chas. J. Slocum have incorporated the Dew Drop Distillery Co. for the purpose of manufacturing liquors. The capital stock is $50,000.

Louisville—Laundry, etc.—M. H. Dill and Henrietta Dill have incorporated the Electric Carpet-Cleaning Works & Laundry.

Middlesborough—Mercantile Company.—Will Ward Duffield, E. W. Mead and Karl Hodge have incorporated the Middlesborough Mercantile Co. to conduct a general mercantile business. The capital stock is $25,000.

Newport—Pearl-button Works.—The Ohio Valley Pearl Co. has increased its capital to $10,000.

LOUISIANA.

Lake Charles—Rice Mill.—Another rice mill will likely be built.

New Orleans—Drug Works.—Simon Lehmann, Frank J., Joseph and Frederick Querens, Jr., have incorporated the Druggists' Supply Co., Limited, to conduct a supply business. The capital stock is $25,000.

New Orleans—Alcohol Works.—The Louisiana Alcohol Co. has applied for a permit to erect alcohol works. The building alone will cost $8500.

MARYLAND.

Cambridge—Water Works.—A company has been organized with James Wallace, president, to construct a water-works system.

Dorsey—Granite Quarry.—Jas. J. Miller is opening a granite quarry.

Easton—Packing-house.—L. S. Fleckenstine, J. E. Aaronson, Jno. Outram, Alfred Wilson and Jos. B. Harrington have organized the Farmers' Packing Co. to establish a packing-house.

Eden—Saw Mill.—D. Andrews, of Philadelphia, Pa., has erected a kindling-wood mill in Eden.

Elkton—Canning Factory.—McGaw & Smith, of Washington, will established a canning factory in Elkton.

Frostburg—Tinplate Mill.—W. R. Percy, J. J. Jones, Owen Hitchens, Henry Williams and Jenkins Jones will organize a company to establish a tinplate mill.

Hyattstown—Shoe Factory.—Mr. Cholein has started a shoe factory.

Hyattstown—Chair Factories.—W. Burdette & Co., Thos. Dronenburg and Dudrow & Dronenburg have each started a chair factory.

Washington, D. C.—Jno. Milton, A. F. Kingsley, W. W. Dudley and others will organize a stock company to manufacture a patent smoke consumer invented by Mr. Milton.

MISSISSIPPI.

Biloxi—Electric-light Plant.—E. G. Bucklin will erect an electric-light plant. Franchise has been obtained from city.*

Boonville—Canning Factory.—The Boonville Canning Factory will put in additional machinery.

Indianola—Saw Mill.—D. J. Spaulding, of Black River Falls, Wis.; W. A. Barber, of Warren, Wis., and M. B. Randall, of Chicago, intend to erect a large saw mill in Sun Flower county to develop timber land which they will buy.

Tupelo—Canning Factory.—The Tupelo Canning Factory will put in additional machinery.

Vicksburg—Furniture Factory.—G. A. Sealey and J. Peters, of Rockford, Ill., may engage in the manufacture of furniture at Vicksburg.

NORTH CAROLINA.

Bessemer City—Cotton Mill.—The Bessemer City Cotton Co. has been incorporated by J. A. Pinchback, R. C. G. Love and others to erect a cotton mill; capital stock $200,000.

Burlington—Furniture Factory.—L. J. Fonville, J. W. and W. W. Lasley and J. T. C. Moore have organized the Burlington Manufacturing Co. to erect a furniture factory.

Charlotte—Mercantile Company.—D. E. Allen, R. C. Carson, W. H. Cathey, J. W. Morrison and J. L. Davis have incorporated the Charlotte Hardware Co. with a capital stock of $15,000.

East Durham—Wood Works.—Wyatt & Dupree will put in new engine, planer and other machinery.

Faith—Oil Mill.—Adam Basinger will manufacture oil from cedar and sassafras.

Faith—Quarries.—J. T. Wyatt contemplates organizing a company to buy the Phillips granite mountain and manufacture paving stone and curbing.

Forest City—Cotton Mill.—W. P. Hurt is said to be arranging for the building of a yarn mill.

Gastoria—Cotton Mill.—A $75,000 stock company has been organized to erect a cotton mill. G. W. Ragan is president, and T. C. Pegram, secretary and treasurer.

Greensboro—Cotton Mill.—J. W. Alspaugh has leased and will operate the Crown Mills.

High Point—Furniture Factory.—Jno. H. Tate (general manager) has formed the Tate Furniture Co. to manufacture furniture.

High Point—Gold Mine.—The Summit Mining & Reduction Co., has been organized to develop a gold mine near High Point.

Huntersville—Cotton Mill.—H. J. Walker, M. C. Hunter and J. W. Mullen have organized a company to erect a cotton mill.

Huntsville—Corn and Flour Mill.—Bitting's corn and flour mill, reported in this issue as burned, will be rebuilt at once.

Lexington—Cotton Mill.—A joint stock company has been organized to erect a 5000-spindle mill. G. W. Montcastle furnished above information.

Raleigh—Gold Mines.—Geo. P. Hart, of Richmond, Va., gives notice that he will apply to the North Carolina legislature to charter the Carolina Gold Mining Co.

Salisbury.—A bill to incorporate the Southern Meteorological & Mining Co. has passed third reading in the legislature.

Stonewall—Hub and Spoke Manufactory.—Joseph Broskey will manufacture hubs and spokes.*

Vandemere—Brick Works.—J. Adams will start brick works.*

Winston—Tobacco Factory.—Kerner, Newton & Co. will start a tobacco factory.

SOUTH CAROLINA.

Abbeville—Iron Foundry and Planing Mill.—A planing mill and an iron foundry are in course of erection.

Enoree—Cotton Mill.—The Enoree Manufacturing Co. will enlarge its mill and put in new machinery.

Florence—Brick Works.—Coffin & Perry will improve their brick works.

Gaffney—Cotton Mill.—The Gaffney Manufacturing Co. has increased its stock by $100,000.

Lake City—Publishing Company.—The Ladder Publishing Co. has been incorporated with J. H. Blackwell, president; M. E. Graham, secretary, and H. E. Goodwin, treasurer.

Sumter—Saw and Shingle Mill.—Joel Brunson will erect a saw and shingle mill.

Winnsboro—Increase Capital.—The Winnsboro Granite Co. has increased its capital stock to $100,000.

TENNESSEE.

Coal Creek—Stone Quarry.—Geo. T. Fenton has leased and will operate the Coal Creek Coal Co.'s stone quarry.

Gallatin—Water Works.—The city is negotiating for the construction of water works. The mayor can give information.

Gallatin—Flour Mill and Elevator.—The recently reported Union Roller Mill & Elevator Co. has let contract for its plant. The mill will have a daily capacity of sixty barrels, and the elevator a capacity of 75,000 bushels.

Greenville—Steam Laundry.—Humphries Reeves has erected a steam laundry.

Harriman—Electric-light and Water Works.—The city will hold an election on March 9 to decide upon an issuance of $50,000 in bonds for water and $15,000 for electric lights. The mayor can inform.

Humboldt—Canning Factory.—J. P. S. Nelson and J. E. Campbell have purchased the Humboldt Cannery, and will improve and operate it.

Jackson—Office Furniture Works.—The Jackson Office Furniture Co. has been organized and will erect a plant for the manufacture of office furniture patented by F. C. Haley.

McMinnville—Water Works.—The city authorities are now receiving estimates for water works and contemplate the erection of same at some future day.

McMinnville—Woolen Mill.—The Mountain City Woolen Mills will put in new machinery.

Memphis—Wood-pulp Mill.—The Tennessee Fibre Co. has built a wood-pulp mill of eight tons capacity daily. The plant cost $10,000, and is owned by W. C. Johnson and M. Larkin.

Rutledge—Iron Mines.—The Watts Steel & Iron Co., of Middlesborough, Ky., will develop iron mines in Grainger county.

TEXAS.

Columbus—Electric-light Plant.—Powell & Shaw will erect an electric-light plant. Contract has been let to the Belton Electric Co.

Denison—Cottonseed-oil Mill.—T. R. Chaney, of New York; T. H. Kane, of Galveston, and P. J. Manning, of Texarkana, have arranged to erect a cottonseed-oil mill to cost $100,000.

Denton—Bridge Works.—L. S. Cherry, S. J. Carroll and J. W. Jagoe have incorporated the Lone Star Suspension Bridge Co. to manufacture material for wire suspension bridges. Their capital stock is placed at $25,000.

Galveston—Macaroni Factory.—G. Martinelli has started a macaroni factory.

Galveston—Publishing Company.—J. W. Burson, C. B. Lee, J. R. Cheek, C. H. Moore and P. S. Wren have incorporated the J. W. Burson Co. to print, publish, etc. The capital stock is $75,000.

Houston—Cottonseed-oil Mill.—Swift & Co. and Nelson Morris & Co., of Chicago, will jointly erect at Houston a cottonseed-oil mill of 160 tons daily capacity. The plant will cost about $120,000, and contract has been let.

Houston—Rice Mill.—A rice mill may be built in the near future. Joseph Davis can inform.

Houston—Brick Works.—M. Butler, of Austin, will establish brick works at Houston.

Houston—Foundry and Machine Shops.—Simpson, Hartwell & Stopple will erect a new foundry and machine shop plant.

Llano—Iron Mines.—C. H. Gage will open iron mines near Llano.

McKinney—Cottonseed-oil Mill.—The McKinney Cotton Oil Co. will erect a cottonseed-oil mill. Contract has been let.

Rockdale—Machine Shop.—Deehl & Shukraft have started a machine shop.

Rusk—Canning Factory.—Pryor & Pryor will start a canning factory.

Rusk—Canning Factory.—Dickinson & Owens will establish a canning factory.

San Marcos—Cotton Compress.—A Mississippi party contemplates building a compress in San Marcos.

San Marcos—Cottonseed-oil Mill.—Strand & Van Winkle will organize a $35,000 company to erect a cottonseed-oil mill.

Temple—Cottonseed-oil Mill.—New Orleans and Temple capitalists will erect a 150-ton cottonseed-oil mill. Their capital is placed at $200,000.

Temple—Cottonseed-oil Mill.—Culbertson & Scales will erect a 150-ton cottonseed-oil mill at a cost of $100,000.

Texas—Chewing-gum Factory.—W. J. Wile will establish a chewing-gum factory.

Waco—Cottonseed-oil Mill.—Swift & Co. and Nelson Morris & Co., of Chicago, will jointly erect at Waco a cottonseed-oil mill of 160 tons capacity daily. The plant will cost about $120,000. Contract is let.

Yoakum—Steam Laundry.—Jim Blanks will start a steam laundry.

VIRGINIA.

Alexandria.—The National Investment Co. has been chartered to deal in real estate; capital stock $50,000. John Milton can inform.

Manchester—Ice Factory.—The Manchester Transparent Ice Co. has been chartered to succeed the Manchester Transparent Ice Co., Limited. B. A. Nunnally is president; John G. Rice, vice-president, and Arthur L. Adamain, secretary and treasurer. Their capital stock is placed at $10,000.

Norfolk—Development Company.—The Northeast Development Co. has been chartered with a capital stock of $25,000. H. L. Page is president; J. Barry King, vice-president, and Walter Sharp, treasurer and secretary.

Petersburg—Trunk Factory.—The Romaine-Barham Co. has been incorporated for the manufacture of trunks, traveling bags, etc. C. N. Romaine is president; Mason Romaine, vice-president, and John O. Barham, secretary and treasurer.

Portsmouth—Brownstone Quarry.—The Yadkin Valley Brownstone Co. has been incorporated and will develop brownstone quarry. John C. Lee is president; Allen Makin, vice-president, and C. S. Sherwood, secretary.

Richmond—Copper Mining.—The Alla Copper Mining Co. has been chartered to mine ores, etc. Wm. G. Crenshaw, of Orange county, is president.; Wm. G. Crenshaw, Jr., of New York, vice-president, and S. D. Crenshaw, of Richmond, secretary and treasurer; capital stock $10,000.

Richmond--Manufacturing.--The Modern Hovel & Kennel Co. has been chartered to manufacture and sell coops, hovels, kennels, etc. Polk Miller is president; John M. Holladay, vice-president, and H. M. Bancroft, general manager; capital stock $25,000.

Richmond—Brick and Terra-cotta Works.—The Powhatan Clay Manufacturing Co., reported last week as chartered, has a paid-in capital of $100,000, and will at once operate their plant. John Pope is president; H. K. Terry, general manager, and R. H. Meade, secretary and treasurer.

Riverton—Stave and Heading Factory.—B. F. Borden will rebuild his stave and heading factory recently burned near Riverton.

Roanoke—Soap Factory.—The Lynmar Manufacturing Co. has been incorporated by Alcaeus Hooper, Charles W. Slagle and B. F. Bennett, of Baltimore, and Rudolph W. Rose and Francis J. Wagner, of Roanoke, to establish a soap factory. Mr. Hooper is president and Mr. Rose, general manager, and their capital is $5,000.*

Roanoke—Brick and Tile Works. The West End Brick Co. has been incorporated to manufacture brick and tile. The capital stock is $10,000. W. H. Tonsley is president, and A. B. Hammond, secretary and treasurer.

Stanley—Creamery.—J. E. Stively, of Quarryville, Pa., expects to establish a creamery in Stanley.*

WEST VIRGINIA.

Bakerton—Barrel Factory.—The Bakerton Lime Works will start the manufacture of barrels.

Bluefield—Printing Works.—The Bluefield Printing Co. has been organized to publish newspapers, etc.*

Buckhannon—Foundry and Machine Shop.—A machine shop and foundry company is being organized.

Davis—Mercantile Company.—A. G. Allen, B. G. Smith, Theodore Taylor, Joseph C. Smith and Henry W. Stokes have incorporated the Beaver Creek Mercantile Co.

Elkins—Publishing Company.—W. G. Wilson, J. S. Posten, U. G. Keim, Wm. Petingale, E. C. Linger and F. C. Helmick have incorporated the Inter-Mountain Publishing Co.

Martinsburg—Steam Laundry.—The Martinsburg Steam Laundry, reported in this issue as burned, will be rebuilt at once.

Nickolette—Lumber Company.—F. F. Nicola, of Pittsburg, Pa., and others have incorporated the Nicola Lumber Co.

Parkersburg—Oil Wells.—W. A. McCash, John T. Harris, D. H. Leonard and V. B. Archer, of Parkersburg, and George W. Bass, of Belmont, have incorporated the Vestal Oil Co. for the purpose of boring and operating petroleum wells.

Ravenswood—Lumber Company.—A. C. Tidd, of Murrayville, and others have incorporated the Pocatalico Boom & Lumber Co.

Ravenswood—Lumber Booms, etc.—J. F. Stone, N. L. Prichet and J. L. Armstrong, of Ravenswood; John H. Riley, of Marietta, Ohio, and A. J. Fidd, of Murraysville, Ohio, have incorporated the Pocatilico Boom & Lumber Co. to construct lumber booms, etc.

Terra Alta—Tobacco Works.—L. P. White and others have incorporated the Crook Tobacco Co.

BURNED.

Felton, Ga.—The Commercial Lumber Co.'s planing mill; loss $150,000.

Huntsville, N. C.—Bitting's corn and flour mill.

Jacksonville, Fla.—Banes, Warrington & Pearson's planing mill.

Louisville, Ky.—The Harrison-Wessinger Tobacco Co.'s works; loss about $200,000.

Martinsburg, W. Va.—The Martinsburg Steam Laundry; loss $9000.

Millen, Ga.—William Bronson's ginhouse and grist mill.

Riverton, Va.—B. F. Borden's stave and heading factory; loss $10,000.

Rover, Ark.—Sid Crownover's flour mill and gin.

Talladega, Ala.—J. F. Warwick's cotton gin.

BUILDING NOTES.

Alexandria, Va.—Hotel.—The Columbia Hotel Co. has been incorporated with Martin F. Morris, president; Edward J. Steelwager, vice-president, and Walter S. Harban, secretary. The capital stock is $400,000.

Anderson, Texas—Courthouse.—Grimes county will rebuild the courthouse lately burned. P. C. McKee, county clerk, can be addressed.

Atlanta, Ga.—Asylum.—G. L. Norrman has prepared plans for the $20,000 addition to be built to the Hebrew Orphan Asylum. R. A. Sonn is superintendent.

Baltimore, Md.—Building permits have been granted to Stonaker Amos for thirty-six two-story houses; to John C. Scherer, Jr., a four-story brick building; Thos. F. Locke, thirty-five two-story buildings; Frank Herbert, five two-story buildings, and J. K. Hubbard, five three-story brick buildings.

Baltimore, Md.—Hall.—The Junior Order United American Mechanics Building Co. has been incorporated by Harvey E. Burch, Wm. H. North, Wm. J. Davis and others. The capital stock is $10,000.

Baltimore, Md.—Warehouse.—August Maag will build a four-story brick warehouse on Hanover street.

Baltimore, Md.—Warehouse.—The trustees of the John Hopkins University will build for the use of Heywood Bros. & Co. a seven-story warehouse, 171x74 feet. It will be of brick and brownstone, will have two electric elevators, etc. George Archer is the architect, and John Haswell & Son have the contract.

Baton Rouge, La.—Church.—The colored Methodists have awarded contract for a new church to John T. Smith. It will cost about $7500.

Brunswick, Ga.—Hotel.—J. M. Hunter, of Cincinnati, Ohio, reports that a charter has been secured for a $500,000 stock company to build an all-season hotel of about 200 rooms on Cumberland island.

Columbia, S. C.—Hospital.—The Columbia Hospital Association has adopted the plans of G. E. Shand for a $5000 hospital building.

Columbus, Ga.—L. H. Chappell, president of the Columbus Board of Trade, writes that his organization will not erect a building this year.

Eddyville, Ky.—Hospital.—The hospital at the State penitentiary, lately damaged by fire, will be rebuilt. M. P. Molloy can give information.

Fort Worth, Texas—Courthouse.—The time for receiving plans and specifications for building the $300,000 courthouse for Tarrant county has been extended from March 13 to April 10 by the Commissioners' Court.

Gray, W. Va.—Hotel.—The Grayton Gas & Water Co. is building the hotel lately noted.

Helena, Texas—Jail.—Karnes county is considering the building of a new jail. The county clerk can give information.

Houston, Texas.—Edward Kiam and T. H. Scanlon contemplate erecting business buildings.

Knoxville, Tenn.—Baumann Bros. have prepared plans for a six-story business house for H. L. Bradley.

Lynchburg, Va.—Market-house.—Moormann Bros. contemplate building a $10,000 market-house.

Memphis, Tenn.—Depot.—The St. Louis, Iron Mountain & Southern Railroad Co. (office, St. Louis, Mo.) will, it is stated, build a new passenger depot at Memphis to cost $60,000.

Monroe, La.—Church.—The Presbyterians contemplate building a $10,000 church.

Montgomery, Ala.—Depot.—The directors of the Louisville & Nashville Railroad Co. (office, Louisville, Ky.) have, it is stated, appropriated money to build a new union depot in Montgomery.

Morristown, Tenn.—College.—It is expected to commence work May 1 on a $40,000 building for the Morristown Normal Academy.

Nashville, Tenn.—Depot.—The directors of the Louisville & Nashville Railroad Co. (office, Louisville, Ky.) have, it is stated, voted money to build a union depot in Nashville.

Paducah, Ky.—Bank Building.—The American-German National Bank has plans in hands of architects for a three-story brick and stone bank building. It will cost about $25,000.

Richmond, Va.—Church.—The Union Station Methodist Church will build a $30,000 edifice.

Rock Hall, Md.—Hotel.—The Rock Hall Land Improvement Co. is arranging to build a hotel.

San Antonio, Texas—Academy.—Alfred Giles has prepared plans for an academy to be erected on Government Hill.

San Antonio, Texas—Clubhouse.—McAdoo & Woolley have completed plans for a clubhouse for the Mission Athletic Club.

San Antonio, Texas—M. Arthur intends erecting a business building. S. M. Maverick also contemplates erecting a block of buildings.

San Antonio, Texas.—Pauly & Dielmann, lately referred to, will erect an office and business building. It will be a two-story and basement structure of brick and stone and 28x125 feet. It will have plate-glass windows, etc.

San Antonio, Texas—School Building.—The Sisters of Charity will erect a brick school building 55x60 feet to cost $6000.

Tallahassee, Fla.—Courthouse.—S. S. Leonard, of Mobile, Ala., has been awarded contract to complete the superstructure of the United States courthouse at Tallahassee at $26,999.

Temple, Texas—Church.—The Baptists will build a $15,000 church.

Tyler, Texas—Roundhouse, etc.—The St. Louis & Southwestern Railway Co. (office, St. Louis, Mo.) contemplates, it is stated, building a 12-stall roundhouse in Tyler, also a coal shute, car shed, etc.

Velasco, Texas—Churches.—The Christians and the Methodists contemplate building churches.

Washington, D. C.—Hotels.—Lindley Johnson, of Philadelphia, Pa., has prepared plans for a large hotel to be built at Chevy Chase. Leon E. Dessez is supervising architect. A hotel is to be built at Elsmere. A. B. Mullett & Co. can give information.

Washington, D. C.—E. Woltz has prepared plans for a three-story brick and stone dwelling for George J. Easterday to cost $8000. Jas. C. Johnson has prepared plans for a $6000 building for the Bayne estate.

Washington, D. C.—Thomes Young will build a five-story brick addition 43x50 feet. It will have an electric elevator. Glenn Brown prepared the plans.

Watkinsville, Ga.—Church.—Contract will be awarded in April for a new church for the Methodist Episcopal Church South. Rev. E. B. Rees can be addressed.

Wheeling, W. Va.—C. P. Hamilton has prepared plans for remodeling the business building of Geo. W. Johnson's Sons.

RAILROAD CONSTRUCTION.

Railroads.

Blowing Rock, N. C.—The name of the company lately reported as applying to the legislature for a charter is the Blowing Rock & Lenoir Railway & Improvement Co. Its capital stock is to be not less than $100,000 nor more than $1,000,000.

Bowie, Texas.—The Chicago, Rock Island & Pacific Railroad Co., previously reported as having under consideration the continuation of its Southern extension from Bowie to Fort Worth, has amended its charter to construct a branch road, beginning on its main line in Wise county, running southwest through the counties of Wise, Tarrant and Dallas to Dallas, a distance of seventy-three miles.

Burlington, N. C.—Walter L. Holt, one of the corporators of the Burlington & Southwestern Railroad Co., noticed in last issue, reports that the company is chartered to build a railroad from Burlington to or near Liberty, on the Cape Fear & Yadkin Valley Railroad. Surveys are now being made, and it is hoped to build the road this year. The distance is about twenty miles.

Cookeville, Tenn.—Jere Baxter has an option on the Nashville & Knoxville Railroad, and has made a proposition to the State which provides for its completion from Cookeville to the Cincinnati Southern, and from Lebanon to Nashville.

Cumberland, Md.—Railroad.—The engineering corps making surveys for the railroad to be built by the Baltimore & Cumberland Railroad Co. in the interest of the West Virginia Central & Pittsburg is making good progress. The line will extend from Cumberland to a connection with the Cumberland Valley Railroad near Hagerstown. It will not be ready for contract for some time to come. Chauncey Ives is chief engineer.

Darien, Ga.—The owners of the Darien Short Line Railroad intend completing their line to the Florida Central & Peninsular at a point about twenty miles distant from Darien. The road at present is twenty-two miles long, and is built from a point in Liberty county to Crescent, which is twelve miles from Darien.

Elizabeth City, N. C.—A bill has been introduced in the legislature to incorporate the Elizabeth & Pasquotank Railroad Co.

Franklin, N. C.—A bill has been introduced in the legislature to incorporate the Harriman, Franklin & South Atlantic Railroad.

Gulfport, Miss.—It is reported that definite arrangements have been made for building the Gulf & Ship Island Railroad. The road is projected from Gulfport north to Jackson, Tenn., and twenty miles are completed.

Live Oak, Fla.—It is stated that work will commence within the next few months on the projected Live Oak, Luraville & Deadman's Bay Railroad.

Portland, Texas.—The Portland, Gulf & Monterey Railroad Co., lately mentioned, has commenced work on its railroad. The road is projected from Portland to Monterey, Mexico.

Shelbyville, Tenn.—The Middle Tennessee & Alabama Railroad Co., lately reported as letting contract to J. T. Crass, of New Decatur, Ala., for the completion of its road, has been incorporated by Daniel Lord, J. Edward Simmons, Garrett A. Hobart, Robert D. Warren, Ernest Coldwell, John I. Cross and David Wilcox. This company is the reorganized Decatur, Chesapeake & New Orleans Railroad Co. The capital stock is $1,170,000.

Sparta, Ga.—Work is now in progress on the East & West Railroad of Georgia, which was chartered in September last by R. M. Mitchell, R. B. Baxter, E. A. Rozier and others. The road is projected from White Plains via Sparta to Davisboro, about sixty miles. The capital stock is $500,000. Mr. Mitchell is president of the company.

Tuscaloosa, Ala.—J. W. Woolfolk, president of the Montgomery, Tuscaloosa & Memphis Railroad, has closed his option on the right of way and franchises of the partially built Tuscaloosa Northern Railway. Mr. Woolfolk obligates himself to build, equip and operate the road within fifteen months. The line is to extend from the Warrior river into the Warrior coal fields, and seven miles are already graded.

West End, N. C.—The Aberdeen & West End Railway Co. (office, Aberdeen), referred to in last issue, will at once construct a five-mile branch from its main line at West End to open timbered lands.

Street Railways.

Atlanta, Ga.—Thomas Camp reports that charter has been filed for an electrical railroad from Atlanta to Lithia Spring, sixteen miles distant.

Augusta, Ga.—John A. Wilson has been awarded contract for the overhead work for the electrical railroad referred to in last issue to be built by the Murray Hill Co.

Austin, Texas.—It is thought that the work of building the rapid transit railway, for which J. Seyes Haulenbeek and associates have franchise, will be commenced this month. The line will connect the north and south sides of the city, and will cross the Colorado river on a 1300-foot bridge. It is stated that the motive power will be furnished by compressed air, and the estimated cost of the road is $225,000.

Baltimore, Md.—J. D. Murray & Co., of New York city, have been awarded contract for building the Linden avenue electrical road of the Baltimore Traction Co. There are seven miles of single track to be cleared up, ballasted, etc. The Traction Company may also build an electrical railroad in southwest Baltimore.

Bedford City, Va.—The franchise lately noted as granted to M. H. Clayton, of Roanoke, and associates, is to build an electrical railroad.

Charleston, S. C.—The company lately reported as organized by E. L. Collins, Chas. I. Dawson, J. T. Stoddard, John Bradley and R. C. Gilchrist to build a rapid transit railway will shortly commence surveys and preliminary work. The line will extend from Hog island, in Charleston harbor, to Seaview City.

Dallas, Texas.—A. W. Childress, lately reported as securing franchise to build an electrical railroad in Dallas, has, with J. S. Armstrong and Seth Miller, of that city, and B. E. Lunny and C. L. Wakefield, of Chicago, Ill., chartered the Queen City Railway Co. Work has already commenced, and the road is to be finished by July 1. The capital stock is $400,000.

Manchester, Va.—The board of supervisors of Chesterfield county have been petitioned by Wm. H. Palmer, T. Wm. Pemberton, T. M. R. Talcott and Geo. H. Jewett for authority to build an electrical railroad from Manchester to Petersburg, a distance of about twenty-one miles.

Norfolk, Va.—H. C. Whitehead, treasurer of the Norfolk City Railroad Co., writes that his company has about determined to adopt the electric system, but not even preliminary steps have as yet been taken to make the change. The Suburban & City Railway & Improvement Co. will doubtless use electricity on its lines in conjunction with the Norfolk City Co.

Opelika, Ala.—H. B. McCall has been investigating with a view to building a street railway in Opelika.

Thomasville, Fla.—An electrical railroad will be built. W. H. Mitchell can give particulars.

Vicksburg, Miss.—M. P. Hillyer, of Topeka, Kans., the prime mover in the Vicksburg Electric Transit & Light Co., previously reported, states that sufficient funds are in hand to build the electrical railroad in accordance with the franchise granted as soon as pending litigation is out of the way.

Wellsburg, W. Va.—The Wellsburg & Lazearville Railroad Co. has been incorporated to build the electrical railroad mentioned last week.

MACHINERY WANTED

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Boiler and Engine.—The Alabama & Georgia Lumber Co., Montgomery, Ala., is in need of a thirty-five horse-power engine and boiler, second-hand. Address W. C. Holt, manager.

Boilers.—The Chatham Manufacturing Co., Elkin, N. C., will want to buy boilers.

Brick Machine.—Capt. J. Adams, Vandemere, N. C., wants a brick machine.

Brick Machinery.—H. E. Robertson, Mocksville, N. C., wants catalogues and prices of brick machinery.

Canning Machinery.—The J. A. Kemp Canning Co., Alvord, Texas, will need some canning machinery.

Cotton Mill.—The Rutherfordton Cotton Mills, of Rutherfordton, N. C., desires to correspond with manufacturers of cotton-mill machinery, as they want to buy full outfit. Address M. Levi, secretary and treasurer.

Creamery Machinery.—J. E. Shively, Quarrysville, Pa., will want machinery for a creamery.

Electric-light Plant.—E. G. Bucklin, Biloxi, Miss., is in the market for a complete outfit for an electric-light plant.

Electric Plant.—The Chatham Manufacturing Co., Elkin, N. C., will want to buy electric plant.

Engines.—The Chatham Manufacturing Co., Elkin, N. C., will want to buy engines.

Gold-mining Machinery.—The Buford (Ga.) Gold Mining Co. will need an outfit of machinery for equipping gold mines. Address Capt. G. W. Thompson, Manufacturers' Record Building, Baltimore, Md.

Grist Mill.—W. J. Morgan, Stillmore, Ga., will want a grist mill.

Hub and Spoke Machinery.—Jos. Boskey, Stonewall, N. C., wants a full set of hub and spoke machinery.

Ice Machine.—The Greenwood Ice Co., Greenwood, Miss., will buy new ice machine.

Incubators.—Mrs. Emma McMelton, Archdale, N. C., wants to buy incubators.

Knitting Machinery.—Moses Adler, care of Eiseman & Weil, Atlanta, Ga., wants to correspond with manufacturers of hosiery-knitting machinery.

Lathes.—The Mobile Spoke & Shingle Co., Mobile, Ala., will buy lathes. Address Geo. C. Clarke.

Meal Bolter.—Amberson Bros., London, Texas, will purchase a meal bolter.

Printing Press.—The Bluefield Printing Co., Bluefield, W. Va., wants a half-medium second-hand job press.

Pulleys, etc.—The Mobile Spoke & Handle Co., Mobile, Ala., will buy pulleys and shafting. Address Geo. C. Clarke.

Rails.—Geo. F. Wysham, 16 West Lombard street, Baltimore, Md., wants 400 to 500 tons second-hand iron or steel rails.

Resaw.—Wilhelm & Son, Myers, Fla., want prices on a resawing machine.

Roofing.—The Chatham Manufacturing Co., Elkin, N. C., will want to buy tin roofing.

Saws.—Wilhelm & Son, Myers, Fla., want prices on small saws.

Saw Mill.—W. J. Morgan, Stillmore, Ga., will want a saw mill.

Sewing Machines.—M. T. C. Jordan, Roanoke, Va., wants sewing machines.

Shingle Mill.—Wilhelm & Son, Myers, Fla., want prices on a shingle mill.

Soap Machinery.—Rudolph W. Rose, Roanoke, Va., wants prices on machinery for manufacturing soap.

Soda-water Machinery.—The Greenwood Ice Co., Greenwood, Miss., will buy new machinery for soda-water factory.

Tank.—The Old Dominion Preserving Co., Richmond, Va., is in the market for an iron tank or retort for cooking jellies in.

Veneer Machine.—The Bayboro Manufacturing Co., Bayboro, N. C., wants a veneer machine.

Messrs. Wenner & Swank want circulars of wagon, buggy and elevator machinery and of agricultural implements and general hardware.

Mr. R. V. Cox, of Withlacoochee, Fla., desires to open correspondence with a view to contract for the manufacture of mowing machines.

Mr. W. I. Yopp, of Houston, Texas, solicits correspondence with dealers for supplying brick and lumber to be used for three new oil mills which he will build.

Wilhelm & Son, of Myers, Fla., want prices on a pair of concave trucks, 8-inch tread, 24-inch wheels, for poles, tram.

W. S. White, of Lingleville, Texas, wants to correspond with some firm that will test iron ore for him.

SOUTHERN FINANCIAL NEWS.

New Banks.

Hillsboro, Texas.—C. A. Sullenberger and associates have applied for authority to organize the Citizens' National Bank of Hillsboro.

Maxton, N. C.—A bill has been introduced in the legislature to incorporate the Bank of Maxton.

Smithfield, N. C.—A bill has been introduced in the legislature to incorporate the Bank of Smithfield.

Tampa, Fla.—The Gulf National Bank has lately added a savings department.

Thomasville, N. C.—A bill is before the legislature incorporating the Thomasville Banking & Trust Co.

Way Cross, Ga.—The South Georgia Bank may increase its capital stock from $75,000 to $100,000.

Wilmington, N. C.—The Bank of Commerce, reported in last issue as applying to the legislature for a charter, is to be established in Wilmington. John D. Bellamy, Sr., can give information.

Asheville, N. C.—A bill has been introduced in the legislature incorporating the Asheville Trust, Guarantee and Collecting Association.

Asheville, N. C.—A bill has been introduced in the legislature authorizing Asheville to issue additional sewer bonds.

Baltimore, Md.—The Mutual Fund Investment Co. has been incorporated by Henry A. Bateman, Frederick J. Griffith and Edward J. Silkman.

Bellevue (P. O. Newport), Ky.—The Union Building Association has been incorporated by C. W. Nagel, G. M. Geiger, C. L. Harrison and others.

Brewton, Ala.—A bill has been introduced in the legislature authorizing Escambia county to issue bridge bonds to an amount not exceeding $25,000.

Charlottesville, Va.—The Central City Building Association has been organized with H. C. Marchant, president; Wm. O. Watson, vice-president, and Lewis D. Aylett, secretary.

Chattanooga, Tenn.—The Chattanooga Building and Loan Association has been organized with T. J. Nicholl, president; M. O. Crumpler, vice-president, and H. C. Beck, secretary.

Dillon, S. C.—The Dillon Building and Loan Association has been incorporated by P. A. Dillon, A. J. C. Cottingham, S. S. Rozier and others.

Louisville, Ky.—The Louisville Guarantee Investment Co. has been incorporated by F. Reed, C. M. Slocum and others. The capital stock is $500,000.

Madison, N. C.—A bill has been introduced in the legislature to incorporate the Madison, Reidsville & Haw River Valley Insurance Co.

Memphis, Tenn.—The Memphis Mill Co. has executed a mortgage with J. A. Omberg and M. B. Trezevant as trustees to secure an issue of $70,000 of 6 per cent. 3-6-year bonds.

Raleigh, N. C.—A bill is before the legislature authorizing Wake county to issue bonds.

Raleigh, N. C.—A bill has been introduced in the legislature to incorporate the North Carolina Savings Bank & Trust Co.

Richmond, Va.—The Southern Aid & Insurance Co. has been incorporated with Rev. Z. D. Lewis, president; Wm. G. Carter, secretary, and Charles Johnson, Jr., treasurer. The capital stock is $5000.

San Antonio, Texas.—Edward Frobocse, treasurer of Bexar county, notifies holders of the 15-year 7 per cent. courthouse bonds of that county, from No. 1 to No. 50, dated May 10, 1882, and payable after ten years, to present same for payment.

Washington, D. C.—The National Building & Loan Association of Washington has been incorporated at Alexandria, Va. The capital stock is to be not less than $100,000 nor more than $2,000,000.

TRADE NOTES.

The old and well-known firm of Morse, Williams & Co., of Philadelphia, Pa., manufacturers of elevators, has been dissolved by mutual consent, and the business will be conducted hereafter by the "Morse, Williams & Co.," an incorporated company chartered under the laws of Pennsylvania.

L. K. Hirsh, No. 549 The Rookery, Chicago, has purchased the equipment of the East Line Red River Railroad of Texas, including iron and steel rails of different weights, coal, box and stock cars, boarding cars, coaches, engines, hand and dump cars, etc., which he offers for sale in lots to suit those who are in the market for bargains in second-hand equipment in first-class order.

The Builders' Iron Foundry, of Providence, R. I., has received the contract for twenty-eight spring return carriages for 12-inch breech-loading rifled mortars. These carriages weigh about forty-two tons each, and are to be used for coast defense in connection with the rifled mortars made by this company.

The plant and outfit of a cottonseed mill in Milledgeville, Ga., is offered for sale. It has a capacity of twenty tons of seed, and the ginnery department is complete in all appointments, and has a capacity of sixty bags of cotton a day. The property has good railroad facilities, and is located in a leading cottonseed market. J. C. Whitaker, of Milledgeville, Ga., can be corresponded with.

Since the first of the year the Monroe Manufacturing Co., of Lima, Ohio, has been refitting and remodeling its factory, putting in new machines, etc., for the purpose of manufacturing the Hill improved patent inside sliding window blinds and the perfection sliding window screens. Owing to the rapidly increasing demand for both blinds and screens it is compelled to discontinue the manufacture of mill work entirely, turning its whole attention to the articles mentioned above, and is now ready to fill all orders promptly and in first-class shape. It has closed a great many large contracts for screens, and has never had so many inquiries for both blinds and screens for estimates and information as at the present time. Everything indicates that 1893 is going to be a very prosperous year.

TRADE LITERATURE.

The North Bros. Manufacturing Co., Philadelphia, Pa., has published a little pamphlet presenting some seasonable helps for household use. This company manufactures the Gem, Blizzard, American and Crown ice-cream freezers, all of which have an established reputation, and a number of other needful articles for household use.

A thorough knowledge of the canning business is accessible to purchasers of the "Secrets of Canning," published by John Murphy & Co., of Baltimore. The book is prepared in a practical manner. It gives a review of the canning industry, and presents the processes used in packing all the principal fruits, vegetables, meats and fish and much other useful information.

An exceptionally complete catalogue of the American graphite pencils manufactured by the Joseph Dixon Crucible Co., of Jersey City, N. J., has been published by that company. It is encased in a rich, white cover ornately set off with gilt stamping and deceptively pierced by a handsome specimen of this company's specialty. The catalogue is designed for dealers in stationery, and will no doubt excite additional interest in Dixon's pencils.

Merchant & Co., with offices in Philadelphia, New York, Chicago and London, have sent out a handsomely prepared calendar for 1893. One illustration shown is of an old Viking war galley, with its great torches flaming and the deck alive with warriors, while the other is of a modern cruiser with the silent, stern-looking guns projecting from its turrets and a search-light showing the distant enemy. In the lower corner are shown several boxes of the firm's product—roofing plates.

The different styles of engines and boilers manufactured by the Chandler & Taylor Co., of Indianapolis, Ind., are illustrated and explained in catalogue "C," just issued. The neatness, adaptability in design, strength and other good points of these boilers and engines are advantageously shown in the catalogue. The pamphlet is six by nine inches, the size for trade publications that is recommended by the American Society of Mechanical Engineers. It is fully illustrated.

The Louisville Tobacco Warehouse has issued a beautiful little pamphlet containing colored views of a number of the more prominent buildings at the World's Fair. On one sheet, prepared in a particularly artistic manner, are several pictures of tobacco farms, the plant and other views, and in type some cogent reasons why planters should send their tobacco to this market for sale. The whole thing is excellently prepared and reflects credit on the designers and the house which has issued it.

The fifteenth annual greeting to the road-makers of this country by the American Road Machine Co., Kennett Square, Pa., is contained in a carefully-prepared catalogue published by this company. The history of this concern offers an interesting study of the progress of American ingenuity and industry. Looking backward to 1878, when the company offered its first machine to the public, which, although filling a want, was necessarily very imperfect, and then taking a glance at its product of today, a machine combining simplicity, strength, durability and availability, it appears that its management has made good use of the interval, and that its experience has been a valuable one. A chapter in the pamphlet on the "Road Machine" is worthy of wide attention.

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